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AGAGATGGGCTGTAGAGATGGGCTGTAGAGATGGGCTGTAGAGATGGGCTGTAGAGATGG  
45 GCTGTAGAGATGGGCTGTAGAGATGGCTGTAGAGATGGCTGTAGAGATGGCTGTAGAGAT  
GGGTTGTAGAGATGGGTTGTAGAGACGAGTTGTAGAGATGGGCTTCAGCCCGCGATCCA  
AGCAATCCGACCGAAACCGGCCGCGCCCAATCCCCGAAACCTATGCCCCGCCAATCC  
TGCCACTCTTCGTCAATCCCGCCGCTTTCGTCAATCCCGCGAAAGCGGAATCCAGACCC  
CCCCGACGCAACAGGAATCTATCGGAAAAACCGAAACCCCGCCACCGTCACTCCCGCGAA  
50 AGCGGGAATCCAGCCCCCAACGCGGCAGGAATCTATCAGAAAAACAGAAACCCCGCC  
GCCGTCATTCCCGCGCAGGCGGGAATCCAGACCCCAACGCGGCAGGAATCTATCGGAAA  
AAACAGAAATCCCCGCCGCCGTCATTCCCGCGCAGGCGGGAATCCAGACCCCAACGCGG  
CAGGAATCTATCGGAAAAACCGACCCCCCGCCACCGTCAATCCCGCGCAGGCGGGAATC  
CAGACCCCAACGCGGCAGGAATCTATCGGAAACGGCTGAAACCGAACGGAATGGAATCC  
55 CGCCTGCGCGGAATGACGGCGGCAGGGGTTTCGGGATTCGCCCTTCGCGGGAATGACG  
GAAAGTGGCGGGAATAACGAAAGGCGGGAATGACCGCGCAAAAGCCGCTGCCCCCTTCG  
GACGGCACCGGCAACAAAAACCGCACGGCGGAAACCGCGCGGGAAGGATAGTCGGGCG  
CGCCGATAAGCAGCGGCCGCCCGGTTATTTCAATTGGGCGATATATTGGCGCAAAACC  
TCGTGTATCGCGCTGTCCAGCCCTTGCCGCCGCGCGGAATTTTCGACCACATCGGCC  
GACAGGCGTATGGTAACGAGTTGTTTCGGGGTTTTGCCTGTGTTTCGTTTTTGCATTACG  
60 CCCTTTTCTTCAATTGTTTTTGATGGGAAAAAGCACCTGTGCCAAGTCTTCGGGCAGG  
GCTTCGGCAATGGGGCGGGCAAGCGCAAAATCTTCGGCGCAAGTTCCCGCACTTCGCCG

TCAGCGTTTGTTAAGGATTGACGTTGCATATTTTTTAACCTCTCTTTTATTCGCTTTGCG  
AAAACGTGATGACACGGATGCCGTCTTTTATCGGCGTAAAACAGACAATGTGCAGGCGTTG  
CGTATCGCCTAGATAAGCAGCGGCAACATAACGCGGTTTCGGGGTAATCAAAGCGGACATC  
GGGCACAATAACGGCCGTTGTCCAGCGTATTTGCCCCGACTGATTCAAAGGGCAAATTCGG  
5 CTCTTCGATATTGCGTTGATTTTTTTTCGGAGTCAAATTCAATCTTCATTGCAGCTTGCAG  
CGTATTTTTGTCTGTTACATTATAAGCGGCAAAAAACCAAATGTAAATACAAAAAGGAAA  
CCCCAAAATGACCATCTATTTCAAAAACGGCTTTTACGACGACACATTGGGCGGCATCCC  
CGAAGGCGCGGTTGCCGTCCGCGCCGAAGAATACGCCGCCCTTTTGGCAGGACAGGCGCA  
GGGCGGGCAGATTGCCGCAGATTCCGACGGCCGCCCGTTTTAACCCCGCCGCGCCCGTC  
10 CGATTACCACGAATGGGACGGCAAAAAATGGAAAATCAGCAAAGCCGCCCGCCGCCCGC  
TTTCGCCAAACAAAAACCGCCTTGGCATTCCGCCTCGCGGAAAAGGCGGACGAACCTCAA  
AAACAGCCTCTTGGCGGGCTATCCCCAAGTGGAATCGACAGCTTTTACAGGCAGGAAAA  
AGAAGCCCTCGCGCGGACGGCGGACAACAACGCCCGACCCCGATGCTGGCGCAAATCGC  
CGCCGCAAGGGGCGTGAATTGGACGTTTTTGATTGAAAAAGTTATCGAAAAATCCGCCCG  
15 CCTGGCTGTTGCCCGCGCGCGATTATCGGAAAGCGTCAGCAGCTCGAAGACAAATTGAA  
CACCATCGAAACCGCGCCCGGATTGGACGCGCTGGAAAAGGAAATCGAAGAATGGACGCT  
AAACATCGGCTGAAAAAATACGTTTACCACCTGTTGGTAGCCATCGACCAACTGTTCAAC  
GCCCTAACCGCGCGCGCGGCGGACGAAACCTCTCAAGCCGCACCTATCGCCGCGCGCGG  
CTCGCCCAAAAGCCCAAAACCCGCTGGAAGATTTTATATACCCTGATCAACGGCGTGT  
20 TTCGACCGCCACCACTGCCGGCAGGCGTATATCAGCGAACTGAAAGGCAGGCAGCAGCAG  
GCGCGGTTCAACCAAGCCGCGCGCGCGGAAAAGGGGACGCGATGAACCTACTTCGGCA  
TGGTAGAGTTTCTGCGCCTGATGGCAATGGTGCGGCCGCCATTTGTCTTCTCTCCGGCA  
CCCGCAGCGAACTGCCTGCTTATCTTGACCTCGTGGCAGAACTGCGCCTGACCGGATGGG  
AGCGTTTTTGCAGGCAGCCAAACCTTGACTGTGAGCAGCACATCAACAGCAATTCAAGCTA  
25 CGACGACCACCTGATTTATAAGTTCTGACCGCAAGTAGCGTACTACTTTTAAAGGCATAA  
GATAATCCCGGTTTAAACAGACCATTAAACGGGGATAAATTTGTGCAAAAGCTAATACAAT  
TTCCTACGCTTCGGCGGTGCAAAAGCTGCCGCCAATTTCGTGCAAAAGCTGCCGCCGCTT  
ACATTCCAGTGCAATGCCGTCTGAACTTCGCTAATCTCGGGTTGCCGCGCGCTGTGTTG  
30 TTTCTCGGTACTCAGCAAAAAGCCGTACAGACGCTCCAATCGGGCGCGGTAGGCGGTGAA  
TTTGTGTGTAGAACATCCGGAAGAAAGAAAGCGCGTTTTGCAGTCGCGCGAAGGCTTGGAC  
GGTCTGCTGGATGTCGCCGATTTTGATTGTCCGGCAAACAGGCGCGGCGCTTGCAAAAT  
AATGGGGAAGAGCTTGATGCCGTTGGTGAACATATCATTAAAGCCGCTCAGGCAGACGCT  
TTGTGCGCAATACGCCAGCGGTTGCGGATAATGGCTTTAAACGGTCAGAAAGCTGGTC  
GTGTTGCTGTTTTTCGCCGCTGTAAACGCCACGCTTTTCGGCGTGGTTCGCGCACGCGGAT  
35 GAGGGAATAACGGTAGTCGCCGTTGAGTTTTTCGTTTTTCATAATTGTAACGAATCAAAGG  
GTTGCCATATCCACATGGCGATAAAGGTCCGCAAAATCACAAATATATAGACAAACCAAC  
GATGCCGTGCGGAATGTGCAAGCCGAACACGGTCAGGATGCCAGCCAAGCCCCGCAAAAC  
AACGGCAAAATTCAGAGAAGTAACGACCGAATTGACCATGCCGCGCACAAATTCGATGGT  
CGAAGCGATAAATTCCTGCGCGTCTGTTGGATACGCTGGTCGATGTTGTCCGGCGCGTG  
40 GCGGCGCATTTGCAGGCGGTAGTAGTTTTTGTGCGCAAGCCAGCGTGCTGTGACGACTTC  
GTTGAGCCGCTCCGACATTTAATCGCCAAGCCTTGATCGAGGAAGTCGTTGACGACGTT  
GTTAAACGCCCGTATCAGCACCACGCCCGGTTTCATTGCAGCAAACATCCAAAATGCCGA  
AGCATTTCAAATCCTGCATCGAGTCGTAAAGCCCTTTGGACATAAAGGTACTCAACACAT  
TCAGCCGCATTTCCGTTAACACCAGCGTAATCATCGCCGTAATCAGCAGCAAGACTTTGA  
45 CCGCGCTTTTCGGTGTGAGACAAAGCCAAAGCGGTGTGGAATAAAGCTCGGTTTGCCATT  
TCTGCATGGGAAATTTCTTACGGTATCAATGCCGTCTGAAAAAGACGGGTACAGTTGATT  
TTTTGATGAAGTTTGGGGAAGTTTTTCCGGTCAGGGTACATTGCGTGTTAATTTATAGTG  
GATTAAATTTAAACAGTACAGCGTTGCTTCGCCTTAGCTCAAAGAGAACGATTCTCTAA  
GGTGTGTAAGCACCAAGTGAATCGGTTCCGTAATTTGTACTGTCTGCGGCTTCGTGCG  
50 CTTGTCTGATTTTTGTGTAATCCACTATACCATAACAACCACGCCGGAATTAAGTTTAAAT  
TTGAATAAAAGGTTTCGGGTTCTGCAAAATACAGAACCCGAACCTTGTTCCGATATTGAAA  
CCGGCTGCCGATTTTGGGCGGTGCGGCTTGCAAGTATCAAGATTTCGCATATGCCGTCTG  
AAGCTCGGAGAGGTTTCAGACGGCATATGCTTATTTGGGCTGCTCTTCAACGAATCTCGGA  
CCTTTCAAGATGCCGTTGTGAGAATAGGGCGACAGCAGGTTGTATGCGGCGGTTTTGGAA  
55 ACCTGATAACCGCGGTGCGTCAGGCTGTTGGCAATCTGATTGACCACTGCGCTGACCAAA  
CCCCCAACAGGCGCGCTGTTGCTGTTGTTGCTGCTTCCGCGATGCTGGCCGAACCCGAC  
CACAACCTCTTTCCGTTGCGGGAATCGACCAGCCGTGCTTTGGCGGATACGGTCGTCACG

CTGTCTAAAATTTGATATGAAGTGCCGTATTCGGTAACCGTAATGTACAAAACCGCATCA  
 TTGCCGAAAATCTGATGCAGTTTTTCCGGCCGGACGGCGTGAATATCGGCGGCATTGGTC  
 AAGCCGTTTTGTTTGAAGGTTTCTCCACGACTGCGGCGGGGAAGACGTAATAGCCGGCT  
 TCGGAAAGCGGCGCGGCGGTGCAAGCCAGTACACCCCATGTTCCGTTGACATCGGGCGAT  
 5 TCGTTTTCAGCGGCGGAACCAACAAAATTGAAGCCGTTTGTCTTCTTGAATGACGTGTAG  
 TCGAAATCGGGCGCTTTTGAAGTTGGCAGGCAGACAGCGCCAACACGGCGGCAAGCCCT  
 AAAATCAAAGGTTTCATCGCTTGCCTCCTTTACCGGTTTTTCATCAGGAAGTCCATAAATA  
 CGCCCGATTTCGGGAAACAGCCTTTTCTCTTCTTCAAAGTGGCGGAACGCGCCCTCTTTGT  
 10 CTCCCGAACGGGAAAGCAGCAGTCCCAGATGGGCGTGCGCACCCGGGGCGAGCATTCATT  
 TTTATTGTTGCCGCTTCCACAAAGGTATTTTCCATTCTTTTCGGATCTGCTGTGCC  
 AACGAAAGTGTCGTTCTCGTTTTTCAAACCT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 45>:

#### gnm\_45

15 CGCGTCCAAATCAACCGCGACACCGGCGAATACCAAACCTTCCGCCGCTGGCTGATTGTC  
 GCCGATGAAGCTATACCTATCCCGATGTCGAAAAAACCATCGAGGAAATCCAAGAGGAAA  
 TTCCCGGCGACTACCATCCAAATCGGCGAATACTACGAAGAGCAGCTGCCAACGAAGGCT  
 TCGGCCGCCAAGCCGCGCAAACCGCCAAACAAATCATCTGCAACGCATCCGCGATGCCG  
 AGCGCGAGCAGAATCTGAACGAGTTTCTCGCCGTCAAAGAAGACATCGTGTCCGGCACGG  
 20 TCAAACGCGTCGAACGCCACGGCATCATCGTCAAGTCGTTGCCGGCAAACCTGGACGCGC  
 TGATTCGCGCGGACCAAATGATTCCGCGCGAAAACTTCCGCAGCGGCGACCGCATCCGCG  
 CCCTCTTCTGCGCGTCGAAGAAATCGGCAACACCGGCCGCAACAAGTCATTCTGAGCC  
 GTACTTCCGGCGATTTCCTCGTCAAAGTGTACGCCAATGAAGTACCTGAAATTGCAGACG  
 GCATGCTTGAAATCCGCGCTGTGCGCCGCGACCCGGGACAACGTGCCAAAGTCGCCGTCA  
 25 AAGCCAACGACGAGCGCATCGATCCGCAAGGCACCTGTATCGGCGTTTCGCGGTTCCGCGT  
 TCAATGCCGTGAGCAACGAATTGTCCGCGGAGCGCATCGATGTCGTCTCTGGTCGCCCCG  
 AACC CGCGCAATTTCGTGATGAGCGCGCTCTCACCCGCCGAAGTCAGCCGCATCGTCATCG  
 ACGAAGACAAACACGCCGTCGATGTCATCGTTGCCGAAGACCAGCTCGCGCTCGCCATCG  
 GGCGCGGCGGTCAAACACGTGCGCCTTGCTTCCGACCTGACCGGCTGGCAGCTCAACATCA  
 30 TGACTTCCGCGGAGGCAGACGAACGCAATGCGGCAGAAGATGCCGCCATCCGCCGCTGT  
 TTATGGATCACTTGAACGTGGACGAAGAAACCGCCGACGTACTGGTTGAGGAAGGTTTTG  
 CAACCTTGAAGAAGTCGCTATGTTCTTCCGCGCGAACTGCTTGCCATTGAAGGATTTG  
 ACGAAGAAATCGTCGATATGCTCCGCAACCGCGCCCGCGATGCCATCTGACCATGGCGA  
 TTGCCCGCGAAGAAAAACTGGGCGAAGTGTCCGACGATATGCCAACCTCGAAGGCATAG  
 35 ATGCCGATATGCTCCGCGAGCCTTGCCGAAGCAGGCATTACCAACCGCGACGACTTGGCAG  
 AGCTTGCTGTGGACGAAGTGAATCAACCGGTGTAAACGAAGAAACCGCAAAAGCCG  
 TCATCTGACCGCACGCGAAGCACTGGTTTACCGAAGACAAATAAAGGGGTACAGATGAG  
 TAACACAACCGTAGAACAATTTGCCGCGGAGCTGAAACGCCCCGTGGAAGACCTGTTGAA  
 ACAGTTGAAAGAAGCGGCGTCAGCAAAAACAGCGGCAGCGATTCCCTGACGCTGGACGA  
 40 CAAACAGCTTCTGAACGCCTACCTGACCAAGAAAAACGGCAGCAACAGCAGCACCATCAG  
 CATCCGCCGCACCAAAACCGAAGTCAGCACCGTTGACGGCGTAAAGTCGAAACACGCAA  
 ACGCGGACGCACTGTCAAGATTCTTCTGCCGAAGAATTGGCAGCACAGGTAAAGCCGC  
 CCAAACCCAAGCCGCACCTGTCCGGCCGGAGCAGACGGCAGAAGACGCGGCAAAAGCCCG  
 AGCCGAAGCTGCCGCACGCGCAGAAGCCCGTGCCAAGGCAGAAGCGGAAGCGGCAAACT  
 45 GAAAGCGGCAAAAGCAGGCAACAAAGCCAAACCTGCCGCGCAGAAACCCACCGAAGCAAA  
 AGCCGAAACCGCACCCGTTGCCGCGGAAACCAACCCGCCGGAAGAAAGCAAAGCGGAAAA  
 AGCCCAAGCCGACAAATGCCGTCTGAAAAACCCGCCGAGCCCAAGAAAAAGCCGCCAA  
 GCCGAAACACGAGCGAAACGGCAAAGGCAAGATGCCAAAAAACCGGCGAAACCTGCCGC  
 ACCTGCCGTGCCGCAACCCGTGGTCAGCGCGGAAGAACAGGCGCAACGCGACGAAGAAGC  
 50 ACGCCGTGCCGCCGCACTTCCGCGCCACCAGGAAGCCCTGTTGAAAGAGAAACAGGAACG  
 CCAGGCACGCCGGAAGCCATGAAACAACAGGCAGAACAAACAGGCAAAAGCCGCACAGGA  
 AGCCAAAACCGGCAGACAGCGTCCCGCCAAACCTGCCGAAAAACCGCAGGCAGCCGCGCC  
 AGCCGTGCAAAATAAACCTGTCAATCCGGCAAAAGCGAAAAAAGAAGACCGCCGCAACCG

CGATGACGAAGGTCAAGGCCGAAACGCCAAAGGCCAAAGGCCGAAAAGGCCGACGCGACCG  
CAACAATGCACGCAATGGCGACGACGAGCGCGTACGCGCGGCAAAAAAGGCCAAAAAACT  
CAAACCTCGAGCCGAACCAACACGCCTTCCAAGCACCGACCGAACCCTCGTTCATGAAGT  
TTTGGTTCCCGAAACCATTACCGTTGCCGATTTGGCGCACAAAATGGCGGTCAAAGGCGT  
5 GGAAGTGGTCAAAGCCCTGATGAAGATGGGCATGATGGTTACCATCAACCAATCCATCGA  
CCAAGACACCGCCCTGATTGTGGTGGGAAGAACTCGGCCACATCGGCCAAACCTGCCGACG  
CGACGACCCTGAAGCATTTCTTGGACGAGGGCGCGGAAGCAGTGAAGCCGAAGCATTGCC  
GCGTCCGCCCCTCGTTACCGTGATGGGCCACGTCGACCACGGCAAAACCTCGCTGCTGGA  
CTACATCCGCCGTACCAAAGTGGTACAGGGCGAAGCGGGCGGCATTACGCAGCACATCGG  
10 CGCGTACCACGTTGAAACCCCTCGCGGCGTGATTACCTTCTTGGACACCCCGGGCCACGA  
AGCCTTTACCGCTATGCGCGCACGCGGTGCGAAAGCAACCGACATCGTGATTCTCGTGGT  
CGCCGCCGACGACGCGGTGATGCCGCAAACCATCGAAGCGATTGCCACGCCAAAGCTGC  
GGGTGTACCGATGGTGGTTGCCGTCAACAAAATCGATAAAGAAGCCGCCAACCAGAGCG  
TATCCGCCAAGAGCTGACCGCACACGAAGTTGTGCCTGACGAATGGGGCGGCGATGTACA  
15 GTTTATCGACGTTTCCGCTAAAAAAGGCCTGAACATCGATGCATTGCTCGAAGCCGTCTT  
GCTCGAAGCTGAAGTTTTGGAAGTACCGGCACCTGTGATGCGCCCGCAAAGGCATCAT  
CGTCGAGGCGCGCTTGGACAAAGGCCGCGGCGCGGTGGCCACATTGCTGGTTCAAAGCGG  
CACGCTGAAAAAAGGCGATATGCTGCTGGCCGTTACGGCATTCCGCCAAAATCCGCGCGAT  
GGTCGATGAAAACGGCAAATCCATTACCGAAGCCGCTCCGTCCATCCCGTCGAAATCCT  
20 CGGCTTGTCCGACGTACCGAATGCGGGTGAAGACGCGATGGTATTGGCGGACGAGAAAAA  
AGCGCGCGAAATCGCCCTCTTCCGCCAAGGCCAAATACCGCGACGTGCGCCTTGCCAAACA  
GCAGGCGGCGAAGCTGGAAAATATGTTCAACAATATGGGCGAAACCCAGGCCAATCTTT  
GTGCGTCATCATCAAGGCAGACGTGCAGGGCTCTTACGAGGCTTTGGCGGGCAGCCTGAA  
AAACTGTCCACAGACGAAGTGAAGTGAACGTGTTGCACAGCGGCGTGGGCGGCATTAC  
25 CGAATCGGATGTCAACCTTGCCATCGCTTCCGGGCGCATTCAATTATCGGCTTTAACGTGCG  
TGCAGATGCCCTCTTCGCGCAAACCTGCCGAAAATGAAAACGTGGAAATCCGCTACTACAA  
CATCATCTACGATGCCATCAACGACGTGAAGGCGGCGATGAGCGGTATGCTTTCCCGGGA  
AGAGAAAGAACAGGTTACCGGTACGGTCGAAATCCGTACGGTCATCTCCGTTTCCAAAGT  
CGGCAACATTTGCAGGCTGTATGGTTACCGACGGCGTGGTCAAACGCGATTCCCATGTCCG  
30 CCTCATCCGCAACAACGTGGTTATCCACACGGGCGAAGTGGCTTCGTTGAAACGCTATAA  
AGACGATGTAAGAAGTCCGCATGGGCTTCGAGTGCGGTCTGATGCTCAAAGGCTACAA  
CGAAATCATGGAAGGCGACCAACTGGAATGCTTCGACATCGTCGAAGTTGCCCGCAGCCT  
GTAATTCCTTTGCAATAAAATGCCGTCTGAAGCGTTCAGACGGCATAACGAAACGGGTTT  
TGTATCATACAGAACCCGTTTTTTTGTCCGAAATCGGCTTCAGACAGCCCTCTTGCCTTAT  
35 CCCGATTTGAATCTGACTTGCCATACAAAACAGGCTTCAGACGGCATTATTTGCCCGCTAA  
ACGTATCCCAAGCTTCTCCGCATATTCCCTGCGTTCCGGCGCGGCTGGTTTCCGGGCGGTG  
CGTATTGAGCGACGACCATTTCCAATGACTGCGGGCTTTGTTGAGTTCCGGGCGGAGTCT  
GGCGGCTATCCGACGGGACTTTGCGGCTGTGACGCTCGATATCCGACTGTGCCGCGTGCC  
GCGGCTTTGCAGGACGTGGAGCAAATCGAGGGCGCGGGCGGCGAGCAGGGTCAGGGTTT  
40 AGGGTCGGTGTGCAGGGTTTGGCGGCCAGCGAGTTTGTGCGAAATGGTGCGGGTATTGGG  
CAGGATGCCGCCCCAAAAGCCGCCGATTGCCGTACCCAATCCGAGCGAGCCGCCGAGTGT  
GGCGATGTCCAGCCCCAAGCCGATGAGCGCGCCGTTGCCGCGCCCGTGCCTGCGGAT  
GCCGTATTGTTTGTAGCAATTGCTGTGCAACGGGTCTTGGCGGAAGGCTTGCAGCATCCA  
GTCGCCGCCGTCGATTTGCTGTGGTAGAAACGGTAGAGGGCAAACAGCCGCTGCTGCAT  
45 CTGCCGTTTCGAGTTGGCGTATTTCCGCCTGCATGGTTGCAGCACGGTGGCGGTATCCTC  
GTTTTCGTCCACTTCTGCTGAAGGCGGCGGCATCAATTAAGTTCGGCGATTTCGCG  
GCGCGCTTCGCCGTCCAGCCGCTGCCATTGCGCGCCGGCGCATGGCTGTGAGGCGGTCAAG  
TGTGCTGCGTTCCGGCAACATGGTGGCGAGGTTTTTCCACAGGCGCAGTTCGCCTTCAA  
ATCAAAGGCGACGGTGTGCAACCCCTGCGAAAACGTGCAGGTTTCTCCTCGCCAGCATGGT  
50 TGTCCACGATTCCGGAAGCTGTCCGCCGTAAGTTGAACACGGGCATAACCGGTTTGGC  
ACACCATGAAAGGATGGTCAACTCGTCCCTGTATTTGTGAGGACGGGTTCCGCGCGCTC  
GATGACGTACATTGCCATATCGCTTTGCAAGACTTGCCGTAAAGACTTTGGCTTCCTGATT  
GAAATCATGGTGCACACCGTGGCTGCCGAGAACTGTTGCAGCCGTTGATGCCGTCTGA  
ACGATTGTCCGATATGGTTTTCCAGCCATTCCAGCACGCCGCCCGCTCTTCGAGTCCGGG  
55 CGTGTGTCAGGAAAACAGCGTGTCTGCGCCGTCGTCGATGGCGGCTTCTTCGACATG  
ACGCGTGGTGCATGGGGCGTTTTTGACTTCGCCGAAACCGCTGTGCGCAAAAGGGTACG  
CAGGAGCGAGGTTTTGCCGGTGTGGTGTGTCCGACGACGGCGAGGGAAAGGGTTGTTT

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5 GTTCATGATGTTTTTGAAGAATGGATTTTCAGACGGTCTTTTTTTCAGAATGGCGGCTTAA  
CAGAACATTTCAAGTGAGTTTATTGGTCTTTCAAACGCCCTTCTCGCGCGCCCTGTGAG  
GCTCAAGCCACGCGCGCGCGCATTTCGGCCAGCGGTTACGCCAATGTTCCAGCTTTTCCG  
AAAGGTCGTCTGAAAGCCCTGTTCCGCCAAAAGCTGCACCACCGCGCGCCCTGCGCCG  
10 CTTCGAGAGTCGGACAATCTGCCGCAACACGCCGCGGTCCGGCACAGTTTGGGCGCGCA  
CGCCGATAAGCAGTTGCGCCGTTTCTGCTTCAGCTCTGTCTCCAGCGCGGCAACCTGTT  
CCCATTGGTGGCAACGCCCTTATCCAGCCATTCTGCGCCAGCCTGCCCTCGAACCATT  
CGCCGTCTGCGACTCGGTCTCCAGCATGACCGCCATTTTCGGCGCATCGTTCAAGATGA  
TTTTCGGTGAAACGGCGGACACGGTTTCCCGACGCGTATCCGCATCGGTGATTTTGTCT  
15 GCCAGCGCGGATGACCGCTGATAATAGGGCTTTTCCAAATCCAATCCGTTTTCGCTTG  
TTTTCAAAGGATTTTACACACTACCAAGCCAGCAGCGCGGAGGATGCCGTAGCAGG  
CGTACTGCGGACCAAGCCCGACCAAGCCCGCGCATCGGCAATATTGCCGTTTCAGAC  
GGCCTTCGATGACCGCCCGCGCATCGGGGACAGGAAACCGAGTTTCGACGGCAGCCATG  
CCAACATTTCCACCGCGCGTACCGAAGCGGCATTGCTCAACAGCGTGCTTTCCAGTTGA  
20 ACGTATATTGCCGACCAAAAAGCAGCAACAATACCGACACCAGCATTCCGAGCAGCGTGC  
AGAGCCACAGGCTGTGCGACGTTGCGCCTATTTTCCAACGTACCGAAGGTTGCCGCCACT  
CGTCCGCATACAGCCGCAACACCGCCTGATTTACAGGGTCTTTGCCCCGAAACCACGTCG  
CCGACTGCTGAAAAACGCCCACTTTCACACGCAGGAACAACATTGCCAACATACTG  
CCAGCATCAGCGTATTCATGCCCAACACGCCCGCCAAAACCAAAAAGAAATTCAGACCCCT  
25 GATTGTCCATTAGAAGATAAGTGACTGAAAAACCGGTAAAAATGCAAACGTGCGCGCCA  
CCACCCACAACCAGAACGACCCCGCACGCACACGTTCCAACGTCCTCCCGCAGCATAACGCT  
TCCTGTCAATCATCTCCGCGGACGGATGATTTTTTCTCCGTAAGTCCCGTCCACGCGGC  
GCAAAGCCTCCGTGCGCTGTACGGGATCGCGCTGAAAATAAAACCGCCTTCGTCCAAAA  
TACGGACAGCTCAACAGTTTTCGGGATGGATTCAACATAAAATGCCGTCTGAAAAATAA  
30 AAAACAGATTTTAAACACACGCATTTTCAAGAATATTACAGTGTAGGCAAAGAGTAAATC  
TCACACAGAAGCAAAAGTATCGGCGTAAACTGACTGCCTTACTTTCCCGAAAGATTGTG  
CGATGTATACAGGCGAACGCTTCAATACTTACAGCCATTTGAGCGGTTTGATTCTGGCGG  
CGGCAGGTTTGGCGCTGATGCTGCTGAAAACCATAGGACACGGGGACGGCTACCGTATCT  
TCAGCGTATCGGTTTACGGCATCAGCCTTCTTCTGCTCTATTGAGTTCCTCGCTGTACC  
35 ACAGAAATTGCAGCCGGAACACTGAAAAGCATTTTGAAAAAACCGACCACTGCATGATTT  
ATGTGCTGATTGCCGGAAGCTACACACCGTTTGCAGTGGTTTCTTTGAGAAACGGGCGG  
GCTGGACGGTATTTTCACTGTCTGGCTGCTGGCGGCTGCAGGAATCGCACAGAAGTCA  
CCATCGGACGGAAGCGAAAAACGCTCTGCTGTCTATTGTGATTTATGTCGTCATGGGTT  
GGATGTTCTTGGCGGTAATGAAATCCCTGACAGCCTCACTCCCGTCGGCAGGACTGGCTT  
40 GGCTGCGCGCAGGCGGTATGCTGTACAGTGTGCGCATTTACTGGTTTGTAACGATGAAA  
AAATCCGACACGGGCACGGAATCTGGCATCTGTTTCGTATTGGGCGGCAGCATCACCAAT  
TTGTCAGCGTGTACGGTTACGTAATCTGAATGCCGTCTGAAAAGCAAAACCTCCCGTTCC  
TGAAGATTGGGAGGTTTCTGTTTGGCGGACATCAGCCCTTGTCGTGGAACCTCGTGAAT  
TCATACTGATAGGACAAATCCCGACCGCTTTTTTCTGTGCCAAATAATCATCATAAATG  
45 GCGCGGATTTCTTACGCAACAAAAACAGGGCTATCAGGTTGGGGATAACCATAAAAACCG  
TTGAACATATCCGACAGACTCCAAACCAATCGACTTTGCCGAGCGTACCCAAAACAATG  
GCAAGCAGAACCAATGCGCGATAGATGCCCAAGTGTCTTCCCTGAAAAGAAAACGGATA  
TTGGACTCGCCGAAATAATACCAACCGATGATGGTGGTGAAGGCAAAGAAGGTCAGACAC  
ACGSCAAGCAATTGCGAACCGAAGCCCGGAAATGCCTTGTAAAGGCAATTGAGTAACC  
50 GCCGCGCCCTGTTCCGCCGAAAGGTTGGCATCGGTGAGGAGGATAATCAATGCCGTAGCC  
GTACATACCAAAATCGTATCGATAAACACACCGACAAATGCCGCATACCTTGCTGCACA  
GGGTGCTTCACATCCGCAGTCGCGTGGGCGTGGGAGTGAACCCATACCTGCTTCGTTG  
GAAAACAGACCGCGCGCCACGCCGAAACGTATCGCTTCGCGCATACCGATACCCGAGCA  
CCGCCAAAACGGCTTCGGGATTGAAGGCGGCGGTAAAGATGTGGTTGAACATCGGCACA  
55 ATATGGTGGGAAATTCAAACAGGATAACGACGGCGCACAAAATATAAACAACCGCCATA  
AACGGCAGCACAATTTGGGCGATATTGGCAATACGGTTACGCGGCCAATCACAACCATG  
CCCGCAAGGACGGCAAGCACAATACCGACTGCCAAAGAGGCACATCAAATGCAATGGTA  
ACGGCAGAAGCAATGGAGTTTGCCTGTGTGCGATTACCGATAAAGCCCAATGCGATAATC  
AACGCAATGGAAGAAACCGGACAAAAACCGCGCCGCGCCCTGCCGATTTTCGGAGTC  
60 AGACCTGTGGGTGATGTAGAACCGCGCCCGCCGATGATTTGCCGTGGCTGACGACGCGG  
TATTTCTGCGCCAGCAGTGCCCTCCGCAAAAATCGTGGACATCCCCAAAACGGCAGAAACC  
CACATCCAAAAAATCGCGCCCGGCCCGCTGCGGTGATGGCGGTGCGCACGCCGCAACG

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TTGCCCCGTACCGATTTGCGCAGATATGGCAACCGCCAACGCCTGAAACTGCGATAAAGAC  
TTGTGCGTCTTTATCGCCTTTGGCAAACAAGCCGCCGAATACGGATTTGAATCCCGCGCCC  
AGCTTGGTAATCTGCGGCGCACCAAGATACAGCGTAAAAAACAGGCCGATACCCAAAAGC  
GCGTAAATCAGCAGGTAGTCCCAAAGGAACCGATTGACTGTACCCACCAGAACAGACAAT  
5 ATATTTTCCATAAAAATAAACCTTATCTTACAATTAAAATGACTGCCTTCCAAAAGACATT  
CCAATAAGGAAACACGGCGAGCAGACCGTATTTGCCGCAACAGATGCCTTAAATTGTCAA  
CAATCGGGGAGAAGCTGCGC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 46>:

10 **GNMAA91R gnm\_46**

CCTTCGACCAAAACGACTTCGTACTGCGCCGCCAATTCTTGTGTGGCGGTGCGGATTTTG  
TCCAAGTCCAAAGCCCTGCCATCCAGTCGGGCGGCGAGGTGAGGCGAAnGnGATAGCTG  
AAGATTTTCGGGCATAGTCAGCCGCCGTTTGTGCGCTTCCTGCATCGGTATGCCATAATT  
TTGCGGTGGACGGCGATGTCGTGCGCCAATAACCTCATGATGGAATAGTACCGTTTTTCA  
15 AAGGTACTTTAATCATAGAGCGTCGAGCTTGATCCATTGCTTTTTGAACAGCAACTGGTA  
CTTCTTTTGATTTACCTTTGCCCATACCAATGnGACCATnACCATCAACCAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 47>:

**gnm\_47**

20 TTTATTATGCTGCCTTTTCTGCTGTATTTCTGTCCGGTACCCTGAGTCAAGAGTCTGCA  
TTTGAAACTTACCGTGCCATTGTTTCCCATCCTTTGGTCAAGCTGGTTTTAATCGGTGTA  
TTGTGGGCTTATCTGCACCATTCCTCGCCGGTATCCGCTTTTTATTTTTGGATGCGCAC  
AAAGGCCTTGAGCTGAATACTGCGCGCAATACCGCTAAAGCCGTATTTGCTTCTGCATTG  
GTTTTGACTGTGCTTTTGGGAGCGTTGTTATGGTAGAACGTAAATTGACCGGTGCCCATT  
25 ACGGTTTGC GCGATTGGGTGATGCAACGTGCGACTGCGGTTATTATGTTGATTTATACCG  
TTGCACTTTTAGTGTTCTATTTTCCCTGCCTAAAGAATATTCGGCATGGCAGGCATTTT  
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GACTTTGTGAGGTGTTTCGAGGCCGTGGATGTCGTCGAATGGGGCGGGTCTTCTTGGGC  
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20 GCTGCCGGACACGCCGGTGATGCAGGTAATCAAACCGAGCGGCGAGCTCAAGGGTAACGTT  
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25 GACCACAATCACGCTGTTGCCCAAATCCGCGAGGCGTTTGGGGTGGCCAGCAGGCGGTC  
ATTGTCACGCTGGTGCAGGCCGATGGAGGGTTTCGTCCAGTACATACATCACGCCGGTCAG  
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30 TTCAAAGAATTGGTGGGTTTTGGTGAGCGGCCAGGCGGAACTTCGTGCAACGGCTCACC  
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25 TATCGGAAACGGCTGAAACCGAACGAATTGGATTCCCGCCTGCGCGGAATGACGGGATC  
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40 GATATTGTTGGAACGCTCTTTGTTGAGGTGTTGTTGCCGACTTCAAAGGTGTTGGTGGC  
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45 AAGCGTGAAAGTTGTCCAGTTTGCTGTTCTACACCGAAAAAGCTGTAATGTTGCACTTT  
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50 CGGTTGCTTCCATTCCGACGAGTTTCGTAGCGTTTGTGCGCAGGTCTATCCACGGTCT  
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55 GCCAACCACAGACAGCCGATGCTGCGCGTTTGCGAATCGGCGTGGCTGTGCGGCAGGCG  
TTTCAGATTGCGGTAACGCGGTACGGCGTAATCCCCGATTTCGCGTACAGCCCTCCGT  
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ATTGCCGCTGCTCAAACGCAATCCGAGTTCGCCCCGATACGCCGTTTTTCAGGCATTTTTTC  
GGGGATTTTGCCATCGGCAACATCGACCAGCCCCGCCACATTGCCCGAGCTGTACAAGAG  
CGTAACCGGCCCCGCGCAGGATTTGACCTGTTGCGACAAGGCGGTATCTACCATAATGGC  
GTGATCGGGCGAAAAATCCGCCATATCGCCTGTTTCGCCGTGATGGTTCAACACTTTAAT  
5 CCGCCTGCCTGTTTGACCGCAATGACGGGAGCAGACGCGCCGCCGCGTATTGCCGAAGC  
GTGGATGCCCCGGTACGCCGTCTAAAGCGTCGCCCAAGTTGACGGCTTTTTGGCGCAAGGT  
ATCGCCGGAGATGATTTTGTGCGGAGGCGGTGCAAGTGTGCAACAGCCCCGACGTGGCGCG  
CGGACGGCTTTTGCCGACGACGCTGACCGTTTCCAAATCCACCGATTGCTCAGTTTTATG  
CGG

10

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 48>:

**gnm\_48**

15 TAGTGGATTAAACAAAACAGTACGGCGTTGCCTCGCCTTAGCTCAAAGAGAACGACTCT  
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20 GAAACAACGGTTGTCGTGATTGACGAAGTGGATACCGATAACTGGGGAATAGGCGGCAAA  
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25 CAACCTGCCGACTTCGCAAGGCTATTGCGATTCTAAAGGGCTGTATTCCGCCCGCAAAGC  
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CGGCAACGGCGTGTCCGAGCTGATTACGATGCTATGCAGGCATTGCTCAACGACGGCGA  
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30 TATGGAAGCCAAAATCACGCCCAAACCAAAGCCATCGTCGTATCAATCCCAATAATCC  
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35 TGCAAAAGGTTACATCGAGGGTTTGATATGCTCTCGTCTATGCGCCTGTGTGCCAATAC  
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CCGCGCGTGCCGGTCAGCAGGTAGGCGTGGTGCAGCCTGCCTTCGTCCAGGGCGTTTTGC  
AGGGCTTTGACGACGTGTTCTGACCGACTAAGTCGGCAAAGGTTTTGGGCGGCCATTTT  
15 CGGGCGAGAAGTTGATAGGCCATGTTTTCTCTTGGTTTCGGTCGTGATGTTTCTGTGCGG  
TGCGTCGGAATGCCGTCTGAACGCGGCTCTCGGGCGGCGTATTCTAGCACTTTCCGGCTTA  
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GCCGTGGTTGCACTGGTTGCTGCGCGGCGTATTTTCCATATCGCGCAGAAGGGCGTTCAT  
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20 GATGCGGTTTTTCGTGTTCTTCGTGATGGTTTTGGCTGCTGCCGACTTGGGCGAGTTTCGTTAA  
TACGTCTTTGGCGAGCGAGACGACATCGGCTTTGCCGAGCATGGCGGGAAGTGCACGGAC  
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25 GCGTTTCGGCGGCGGCGTGCATATCGATGAGCAACAGGCTGTCTTCGGCTTGGGCAAGAAT  
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30 CGCATATGCGGACTGATAGGGCATGGGCGCGGTTTTGCCTGATGAACCAAGGCATTGTG  
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35 GACGTTGACATCCACGGCTTCGGGCGGCGAGGTCGAGAAAGAGGACGAAGGCGGGAGTGAG  
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40 TTTGAACACTTGTGTTGCGGTGCGGTTTGGAGGAGAAGGCAATGTGCGGATGCGCCAGCGC  
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50 GGCTTCCGTTGCAAAAAACGTCTTATTTCTATAATAAAACCCCTTATCTTTCTGCCCGTAT  
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5 GCACAGGGTGAAGCCGGAAGCTACGATTTGGCACTGATAGACGCAGACAAACCGCCACG  
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25 GCGCGCGGCATCAAAGCCATCATCGCGGGTGCGGGCGGCGCGCGCATTTACCCGGTAT  
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35 ACCCAACTGTTTGCGCGGGGTGAGGTTGCGGAACCTTGGTGGCTGCCCAACCGAAGGCGCG  
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40 CAGGTGCGGGGAAATAATCTCGCCAATCGGACCGGGATAGGTTGTGCCGTATGCCGCGCC  
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50 CGGTTTTTTCGCTGCCATTTGGACGATGAACCTGCCCCAAGTCGCTTTCTACCGCTTTAAT  
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GACCATCAGCTTGCCGTTTTTGGCTGTGATGATGTCGTGGATAATTTGGCAGGCTTCGGT  
CGGGGTTTTCTGCCAGTGCACTTTCACGCCAACTTAGTCAGGTTTTCTTCCAGCTGCTC  
CAGCAGGGCTGGCAATTTAGACAATGAGCGCTGACGGACGTGTTCCGACAAATCGCGCAG  
55 GCTTTGCGAGTCTTCTTCGTGCGTCAAACGGCTTTGCGTTTTGGTCATCAGCATATCCAT  
CGCGGTACGCAGGCTTTTTCGCAAGGCTTTGTCTTGAAGGGAAATTGCGGCGTTTTGCTT  
GAAAGTTTTCCGGCTTCATGTGAAATTTGATGGTTTTGCGTAGTCATGCGTTTTCTCCTCCAA

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TCGGCAGGGGAAATGTGGTCGGGCAGGATGGCGAGGATGACCAAATCGCGCGGGCCGTGC  
GCGCCGTAAAGCAAGCGTCAGTTGGATGTCTGCGGTTTTGGACGGGCCGAAATCAGGAAT  
ACATTGGTCGGCATAACCGTTTTCCACCAGTTTTTCGCCTTCGACGGCATTATGAAACTCG  
5 TTGTACATCTTGGACGTATCGAACAGGCAGAAATGCACGGGCGGAACGAGGCTTAAAGTA  
CGCGGTTCTTCGGGGCTGGAAAACAGCATCAGCGTGCCGGTGCGGGCGATGCCGCATTGC  
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10 GCGGCAGCCCAATGTTTCAGACGCTCAACTTCGCTGCCCAAGAAACACCCATTTACGG  
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TATGTTTCGGACGCGGCATATCCGGCTCGTCCTTGCGGATTTTGCCGCCGATGTTTCATCA  
TACAGCCCGCAGTCCGCGCTGATGATTTTCGGTTGCGCCGGTTTTCTTTCAGCGCGGCGACTT  
15 TGTCTGTTACCATGCGCCGGAATATCGGCTGTTTGACGGAGAATGTGCCGCCGAAGC  
CGCAACATTTCGCTTTTCGTGGTTCGTGGACGATGCGTTTCGACGTTTTCCATACCGTCAATCA  
GTTGCCAGCCTGAAAGATGGACATTCATTTTCGCGCGGGGCGGCGCAGGAAGTGTGAACGG  
CGACTTTGAGCGGTTCCGCCCTTGCTTCGGGTTTGAAACCGATGGCAAGCAGGAAATGGG  
TAAACTCGATGATGCGGCCGGCGCAATCCACAGCCCTTTCCTCGTACTCGCTGCCTTTAA  
20 ACAGCGTCGGCCAGTGGTGTTCATCATGCGCCGCGACGAGCCGGACGGCACGACGATCG  
GCCAGTTTTTCAGGAAAAGGTCGAGTTGTGCTTTGGCGACATCGAAGGCTTCGGTCGGAT  
GGCCGGATGAATAGGCAGGCTGGCCGCGACGCTTTGCGCCATCGGGAAATGGACGCGTA  
TGCCCTGCTGCTCGATTAGGTAATGGCATCCATG

25 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 49>:

**gnm\_49**

TTTTACAAGATGCCAAGAGTCATCTGTCATTTCCATCTCAACTAGCACATAACCAGGATA  
TGACTTTCTTTCACTAATAGTCTTACGACCATTGCGGATATCAACAACCTTTCTCTACAGG  
CACCAGAATTTGTCCGAATAATCTCCCATCTCCTCACGGGCAATGCGCTCTTCCAATAT  
30 TCGTTGGACATTCTTCTCAAACCCCGAATACGCCTGTACAACATACCATTTTTTCGACAT  
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35 CCACTTTAACGTTCTTTTTTTTCAGGCGTATGTTCTGTCTATATTATTCATCATAGCA  
TCTGTCTATCTCAATCCATGTAAATGGCAAGAGAGTTTACTAAATAACAAATACAAAAA  
AATTAACCGACACAAGGCCGGTTAATTTTTTATTTGGCAGGCCAAGAGGGTCTCGAACCC  
CCAACCTCGGTTTTTGAGACCGATACTCTACCAATTGAGCTATTGGCCTCTAAACTTAA  
GCGATAACAGAAGAAACACGCGCGCACCCACGGTACGGCCGCCTTCGCGAATCGCAAAG  
40 CGCAGGCCTTCTTCCATAGCGATAGCGCAATCAGTTCTACGGTGATGGTTACGTTTTCA  
CCCGGCATTACCATTTCTACACCTTCTTCCAAAGTAACCGCGCCGGTTACGTCGGTGGTA  
CGGAAGTAGAATTGCGGACGGTAGTTGGCGAAGAACGGAGTGTGACGACCACCTCTTCT  
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45 TTGTCGCCCCGCTGACCTTCGTCCAGCAGTTTGGCGAACATTTCAACACCGGTACAAGTG  
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50 GAACCTTGTAACATCGGGCAGTCATCGCCGGGGAAGTCGTAGCTGGACAGCAGGTCGCGG  
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AACACGATGATGTAAGGTACGCCTACTTGGCGGGCCAGCAGGATGTGTTTCGCGGGTTTGC  
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5 GTAATCATGTTTTTAAACGTAGTCGGCGTGCCCCGGGCAGTCTACGTGTGCGTAGTGCGCGG  
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GTAGTCAAAGCGGCAGTCAGGGTGGTTTTACCATGGTCAACGTGACCGATGGTGCCAACG  
10 TTTACGTGCGGTTTTGCTACGTTCGAATTTTTCTTAGCCATGGCAATATCCTATATATCT  
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30 GAGTGCGCCGCTGCCTCCGAAGAGATCCAAAACCGTTTTACCCGTCAAATCCTGTCCAG  
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35 CGGTGAGCTTCCGGAGCAGCTCGATTTCTTTGTCTTTTTGTTCCAACATTTCTTTGCACT  
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40 GAGGTGCGCGACGTGTCCGTAGGATGCAAGGATTTCAAATCGCCGCCCAATATTTTTTT  
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TGGCGAATATGCCCCCATGCGCCATCTAAGCGATTTGGAGCAGCCTCGCCAACAATTACC  
45 TCAGGCATTTAGGCCTAATGGTGCAATTTACATTAATGATACTGCTTCACTAATTGCAAA  
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TATTGATACTGAGCTTGATTTACAACAGGCAGAAAACATTCTTAATCACAAGGAAAGCTA  
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50 GGTGATGCTGCCTATAATGCAGGCGCTGAAGTTGTTAAACATCAAACACACATCGTTGA  
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55 AATTAACTGGTGGCCTCTTTTGGTAAGCCTATTATTCTCTTACCGGCATGAATTCTAT  
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5 GGGAGAAAAGCCAACTAAAGATTTTCGCTTTGCATCTGTCTAGCAGATAAAGACATTAA  
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10 GAGGATTGGCTATTACATATAGCTAATTCCTCATTAAATTTTAAAGAGATACAATAATGCTA  
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25 GTTCAAAGCTAATATTGTTTAAATCGTCAATTCCTGCATGTTTAAAGGAATTGTTAAATT  
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30 ACCCGTATTCCACGATTAAATAAATCTCATCAGCTATACTATCAAAAACAAATTTTGCCTA  
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5 TATTTTCATTAAAGATTTTACAACCATTATTATCAATCTATCAAAGTATTTTATAGTATTTTA  
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10 TCATTTTGCCGCTTGAAAGCGGTGGGTGAAAGTGTGGCCGAGCCGATGAAATATTATGA  
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15 CAATCCGATTGGCGCGCATGAAAGCGGCTTGATTGGCGAGCAGCCAAACGGCATCCCGAA  
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20 AGCTTCGGGTTTGAAGATTCCGTATGAAGTCAAACCGCGCCGTGCCGGTGAATTTGGCGTG  
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40 ACGCCGTGACGCGAGCCAAAATCAGGCGGGATTGGGCTGGCTGCCTTTGGAAACCTTCG  
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45 GCTCCTGCCCCGTGTACGACAAACCGATGATTTATTACCCCTTGTCCGTTTTGATGCTGGC  
GGGAATCCGCGATATTTTGGTGATTACCGCGCCTGAAGACAACGCCTCTTTCAAACGCCT  
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CGGCTTGGCACAGGCATTTATCATCGGCGAAGAATTTATCGGCAACGACAATGTTTGCTT  
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50 AGCGCAAACGCACGGCGCAACCGTGTTTGGCTTATCAGGTCAAAAACCCGAACGTTTCGG  
CGTGGTTGAATTTAACGAAAACTTCCGCGCCGTTTCCATCGAAGAAAAACCGCAACGGCC  
CAAAATCCGATTGGGCGGTAACCGGCTTGTATTTCTACGACAACCGCGCCGTGAGTTTCGC  
CAAAACAGCTCAAACCGTCCGACGCGGCGAATTGGAAATTACCGACCTCAACCGGATGTA  
TTTGGAAGACGGCTCGCTCTCCGTTCAAATATTGGGACGCGGTTTCGCGTGGCTGGACAC  
55 CGGCACCCACGAGAGCCTGCACGAAGCCGCTTATTCGTCCAAACCGTGCAAAATATCCA  
AAACCTGCACATCGCTGCTCGAAGAAATCGCTTGGCGCAACGGTTGGCTTTCCGATGA  
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 5 CGCGGCCTGCACTATCAAACGAAAACACACAAGGCAAACCTCGTACGCGTGTTGTCGGC  
 GAAGTATTCGACGTGGCCGTGATATGCGTAAAGACTCCCCACTTTCCGGCAAATGGGTA  
 GGCGAAATTCGTCCGAGAAAACAAACGCCAACTGTGGGTACCCGAAGGTTTCGCACAC  
 GGCTTCTATGTACTGAGCGATGAAGCCGAGTTCTGTCTATAAATGCACGGACTATTACAAG  
 CCTGAAGCCGAACAGGTTTTAATATGGAACGACCCGACAGTCGGCATAGGCTGGCCGCTT  
 10 CAAACCGCGCCGCTGCTGTGCGCCAAAGACCTTGCCGGCAAACGTTGGGCGCAAGCCGAA  
 AAGCTCCGCTTCGCTTTACCGATAAAAAATGCCGTCTGAACGTTTCAGACGGCATTTT  
 TTCCGACAGCCTACTTGCCCGCCTTCAGTACGCGCTGTGCAAAGAAAAACATCCCGTTAA  
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 15 CGATCAGGCTTTTACCGACAATCAGGCCGCGGAGAACAGGTTCCGATGCGCTCGGCGT  
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 CGACCGCAAGGACGGGCAGGGCAAGTTTGCCGCTGATGATTTTTTCAACACCAAATCGA  
 CGACGATTAATACTGCTCCAATCAGGATACCGGTAAAGATATAGACCCATTCAAGGTTGT  
 20 GGGCGAAAATGCCGACGCGATGGTCGTATCAAAGTCGCTTGAGGGGCTGCCAAGCCT  
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 25 ATTTGCGGTTAGCCTCATCCGCCAACAAACCTCCGGATTGCGCTACCAGCAGCAAAACCA  
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 30 TAGGCGACAAATCCTGTTCCGCGCGTTCCGCGAGCGGCGCACCGCGCCAAAACCTCTTGA  
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 ACGCCGCCATTTCCATATCGGAAGGTTGCGGAATGTGTGAGGAGAAATACGGCACGGCAA  
 TGCCCCAAGCAATCGAAATGCCAACAGGATGGCGATACCGCCCGTCAGTCCGACCAAT  
 35 AGCCCGCGCCCAACAATGCCAGTGAAAAGCCCATCGGCAGCTGGAATAACGCCGTACCGC  
 TTTTAAACCAATAACTCGCGCTGTGCGCAATCACGCGCAGACCTCCGGCGCAAAGCTCA  
 TCAATCCCGCCAACGCAACCGCGCGCGCCAGCTCTTTGATGCCGTGCTGCTGACGGTTA  
 TCCCCTTCTTCATGACCGCCCACTTTCAAATTTACGAGCCGCCACACCTTCCGGATAA  
 GGCAATCGCTTTTACCACCATTCGTAACGCAGAGGAATGGTGAAAATCACCCCCAAA  
 40 ATCCCGCGGCAATACATAAAAGCGTCTGTGCCAGAACGGGAACCGCTCCAGTAGCCC  
 GCCATTACGCAAAACCGGCGAGGACGAAGATGATGGTCGAAAGCGTACCCGCA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 50>:

#### GNMAB22R *gum*\_50

45 AATGAnCGGCGGCAGGCTGGCGACCGCGTATCCATACTTTCCGTCATGATTGAAGACAAT  
 CCCGACATACCGCAGCTTTGGGCGCAATGTTGATTTTnCTCTATCCGGTTCCGTATCG  
 AAAAAACAAGGGCTGTACTAGATTAGCCCTAAATCCACACCAATCCCGCAGATTTTAA  
 GCTGTTGAGACGGTGTGCCGAAGTTAAATCGAAATTCGCATTCTTTCAAGAACAGCGGGA  
 AAGATTTACGATCGATTCCGTTGTATTTTCGCAAGACGCGTTTAGTCTAGAGTCTGTATA  
 50 TTACATTATTTTAGGGTCTGCTAGCCAATTTCTTGTCCCTTCATTATTTTATCTTCTG  
 AAAGAAAATTATTTTTTCCATGCTATTAATTAATGATATGATTTTnATTTAAATAA  
 ATGTTTn

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 51>:

**gnm\_51**

```
5 ACAATTTCTCCTGCAGCGCCGATGATGTTTTTAACGATATCTGCAGTGCCGTTGAAGGCT
TCGGCGGCATTGCCCCGATCTGTCCAGCTCGGGGCTGTATCGGGTGGCGCGTTTGAATCCG
TCGCCTACTCCTTGCGTCAGCATACTACCGGCATTGTGGAACGGTCGGCAAGCCGTTGT
CCGGTGCTGCGGTTGTGCGGTCAGGTTGAGGCGGATATTTTGGGCAACGCCTTTTATGTCG
TAGCTGTATATATCCCTCGCGCCTTTGGGAGCGGGATAGCCGCCGCCCTGTGGCCCGTCA
10 TAGCCGTCGGCGGGATGGTGTTCGTATCCGTCCCAATGGATGCGGTAAAGGCTAAATCCG
TCAACGGGACTACCGGCTTCATCAGAATCGGAATGTGAGGCATGGTTGTGAAGGGGAA
TGGACTTCGTGCCCCTGATCGGAAAAGCGGACAATGTAGCCGATATTTCTTTAATGGCC
GCCTGTTGAATCATCAGGTTGCCCAACTGATGGCTTTGTATTTTCCCAATCCGATATGr
ccGaCTGCGCTCGGCAAGTTCCCCCTGCTGCCGAATAGGTGGTATTTCCCGTCGGGTTTC
15 GAAATGCTGACGGTCGAGAACCTGCCGGATAAAAGAATCGTTTGCCAAATCTGAGGCGTG
TGCATGCATCGGCAGGCACACTGC
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 52>:

**gnm\_52**

```
20 GCTTGCATGCCTGCAGGTCGACTCTAGAGGATCCCGAAACGCCGTGAAATCGGTCACGGC
CGTTTGGCTAAACGTGCATTGTTGGCCGTATTGCCGAAACCTGAAGATTTTCACTACACC
ATGCGCGTGGTCTCCGAAATTACCGAATCCAACGGCTCTTCTCTATGGCTTCCGTCTGC
GGCGGCTGCCTGAGCCTGCTGTCTGCCGGCGTGCCCTTGAAAGCACACGTTGCCGGTATC
GCGATGGGTCTGATTCTGGAAGGCAACAAATTTGCCGTCTTGACCGACATTTTGGGCGAC
25 GAAGACCACTTGGGCGATATGGACTTTAAAGTGGCCGGTACGACCGAAGGCGTTACCGCG
CTGCAAAATGGACATCAAAATCCAAGGCATTACCAAGAAATTATGCAAATCGCTTTGGCA
CAGGCCAAAGAAGCGCGTCTGCACATCTTGGATCAGATGAAAGCCGCCGTTGCGGGCCCCG
CAAGAGCTGTCCGCACACGCGCCACGCTTGTTCCAGATGAAAATCAACCAAGACAAAATC
CGCGAAGTTATCGGTAAAGGCGGTGAAACCATCCGTTTCGATTACCGCTGAAACCGGTACG
30 GAAATCAATATTGCCGAAGACGGTACGATTACCATTTGCCGCAACCACTCAAGAAGCCGGC
GATGCGGCGAAAAACGCATCGAGCAGATTACTGCCGAAGTGGAAGTGGGCAAAGTGATAC
GAAGGCACTGTGGTGAAATCCTCGATAACAATGTCCGGCGCGATTGTCAGCGTGATGCCG
GGCAAAGACGGTTTGGTACACATCAGCCAAATCGCCACGAGCGCGTACGCAATGTCCGGC
GACTACCTGCAAGTCGGTCAGGTGGTGAACGTGAAAGCATTGGAAGTGGACGACAGAGGC
35 CGTGTCGGTCTGTCCATCAAAGCCCTGCTGGACGCGCCTGCCCGTGAGGAAAAATGCCGCC
GAGTAACGCTTAGGGTGAAAGTGCCGTCTGAACAGGTTTCAGACGGTATTTTACGGGT
ATCGGGAATGAATGGGGCTTACAGCCACAGGACGGCAAGTTTCCATAATGCCCATAATGA
TACGGATAATCCCGTACACAGGCGGATATATCGGTTTTGCATGATTTTTTTCAGTTGCAG
GGAAAAATGCCGATTGCTAAAAGATTGGGCAGCGTACCCAGTGCAAAGGCAAGCATATA
40 TAACCCGCCCCGTGCCGCACTACCGCTTCCCAGCGCGTAAAGCGACGCGCTGTAAACCAG
TCCGCACGGCAGCCAGCCCCATAATATCCGACCGCAAGGCAGGCGGGTATGGATTTTAT
GGGTAACAGCCGGTTGAGTATCGGGTTCAGGTTCCGCCATATCGGTTTGCCGATTTTCTC
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45 CTGTCCGATTAATCCGAGTATCAGGCCGATTGCGGTATAGCTGCTTACCCGTCCTGTGTT
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GGTGAGGAAAGTGATGTCGTGGTTCATAGGCAGTTTGAAGTCAAATATTTTTCGGGAAAA
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50 AGTCTTGAATAAGGATGCAGTTTGCACCCTGTATTTTCGATAATTTTGTAAAATCCGCCCT
TTACTGCGCCGTCGGCGGGTTTGCCGTGTGCGTCAAAATACAGGATGGTGCGGTTTTGAA
```

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5 TCGGGGGGATTTCGGATTTCGGAAGCAACAGACGATACGGGATTTCGGAACAATATGAACA  
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10 TTGCCCGTTTGTTCAGACAAGGGTTTGACCGATAAGAAAGAAATTTGTGTTGAAACGG  
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15 GTTCGCTTATCGAACCGCACAGGCAGTTTCCCGAACCGCTCAATGTCGGCTTTATGCAGG  
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20 TCTGATATTCCGCGCAGGAATGTTGCAATGGTTTTTGGGCGAGTATTATGCTGTGGCTGGG  
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25 TTATTGCTTTTCGGGAACGGTTCAAGTGTTTGTGTTTTCGGGCACTGCTCAAACCTTATGC  
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30 TGGTTTTTTAGGCGGCATAGGTTTAGGATAAAGCCATATCCGAAATTTGTTTATGTTTCG  
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35 GTGCCGAAAAAGCGGGCAAAATCAACAAAAACACCGTCATTGTGCAAGCAACAGCGGCA  
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CGCGCATCCCGACACTTATTTTATGCCGCGCCAGTTCGACAATGAGGCAAACCCCGAAGT  
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 50 AAAATTCGTACTCGGCGGTATTGCCGCATTGTTTTGGCGGCCTGCGGCGGTTTCGGAAGG  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 53>:

**gnm\_53**

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5 CTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTGTTT  
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 25 TGAAGCACCAGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGT  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 54>:

#### gnm\_54

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 35 CCTGCCTCCAAGCAAATACCGACCGTAAATAGCGGCTGGTTAGACCGTGAATTAGGCGAA  
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GCGGAACCTCTGCCGATACTGCTTATCGCCACCGTAACCTTTATGATTAATTCTCGGCAT  
45 ATCCTGATGGGGCGGCGCTTGCCCCGCACCTGAAAGGAATACCGCTGAAAAAGCCGTG  
CCCGCACTGTTTTTTATGTGTGAIGAAAGCTGGGCGATGGCATTCTCCGAAATCCAAAA  
CGGAAAGCAGCCGGTTTGCCCGCATTCAATATGCCCTTTTTATAGTGGATTAAACAAAACC  
AGTACAGCGTTGCCTCGCCTTAGCTCAAAGAAAACGATTCTCTAAGGTGCTGAAGCACC  
AGTGAATCGATTCCGTACTATCTGTACTGTCTGCAGCTTCGCCGCTTGTCTGATTTTT  
50 GTTAATCCACTATATGAATCGTCATTCCCGCGCAGGCGGGAATCTAGACATTCAATGCTA  
AGGCAATTTATCGGGAATGACTGAAACTCAAAAAACTAGATTCCCACTTTCGTGGGAATG  
ACGGCGGAGCGGTTTCTGCTTTTTTCCAATAAATGCCCCCAAACATAAATCCGTCAATTCC  
CGCGCAGGCGGGAATCTAGACATTCAATGCTAAGGCAATTTATTGAAAATGACTGAAACT  
55 TTCGTAATCCCGCGCAGGCGGGAATCTAGACATTCAATACTAAGGCAATTTATTGAAAA  
TGACTGAAACTCAAAAAACTGGATTCCCACTTTTCGTGGGAATGACGCGGTGCAGGTTTCC  
GTACGGATAGGTTTCGTCAATTCCCGCGCAGGCGGGAATCTAGACATTCAATGCTAAGGCAA

TTTATCGGGAATGACTGAAACTCAAAAACTGGATTCCCACITTCGTGGGAATGACGGCG  
GAGCGGTTTTCTGCTTTTTTCCAATAAATGACCCCAACCTAAAATCCGTCAATCCCGCGCAG  
GCGGGAATCTAGTCCGTTTCGGTTTTCTGGTTTTTTTGGCTAGTGCCGCAACATTAAATTTCT  
AGATTTCCCACTTTTCTGGGAATGACGGCGGAGCGGTTTTCTGCTTTTCCCAATAAATGACC  
5 CCAACCTAAAATCCGTCAATCCCGCGCAGGCGGGAATCTAGACATTCAATGCTAAGGCAA  
TTTATCGGAAATGACTGAAACTCAAAAACTAGATTCCCACITTCGTGGGAATGACGGGA  
TGCAGGTTTCGTGGGAATGACGTGATGCAGGTTTCCGTATGGATGGATTCTGTCATTCCCGC  
GCAGGCGGGAATCTAGTCCGTTTCGGTTTTCTGGTTTTTTTGGCTAGTGCCGCAACATTAAAT  
TTCTAGATTCCCACITTCGTGGGAATGACGGCGGAGCGGTTTTCTGCTTTTCCCAATAAAT  
10 GACCCCAACCTAAAATCCGTCAATCCCGCGCAGGCGGGAATCTAGACATTCAATGCTAAG  
GCAATTTATCGGAAATGACTGAAACTCAAAAACTAGATTCCCACITTCGTGGGAATGAC  
GGGATGCAGGTTTTCCGTACGGATAGGTTTCGTCAATCCCGCGCAGGCGGGAATCTAGACAT  
TCAATGCTAAGGCAATTTATCGGAAATGACTGAAACTCAAAAACTAGATTCCCACITTC  
GTGGGAATGACGGGATGCAGGTTTCGTGGGAATGACGTGGTGCAGGTTTTCCGTACGGATGG  
15 ATTCGTCAATCCCGCGCAGGCGGGAATCTAGACCTGTCCGTTTTCTGGTTTTTTTGGCTAGT  
GCCGCAACATTAAATTTCTAGATTCCCACITTCGTGGGAATGACGGGATGTATAGTGGAT  
TAACAAAAACAGTACGGCGTTGCCCTGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTG  
CTGAAGCACCAAGTGAATCGGTTCCGTACTATCTGTACTGTCTGCGGCTTCGTGCGCTTG  
TCCCGATTTTTGTTAATCCACTATACCCATAAAAAATACCGTCTGAACATTGATTTTCAGA  
20 CGGTATTGGCAAAACAACCTTATTTTTACGATTAGAGAAGGCTTCACAGCCGACATCTG  
AGGACAAGGTCTCCAAATGGGCTTGGGCAGAAGCGGCATCACGGCATTGTATCCGTCCG  
CCACGCTGTTTCATCCATACCGACAAAGTATAACCCGTCCCGCCTTCGGAACGCCGACCA  
ACCTGTATGCCCTTGATTTTTCTTATCGACAACTTTACCGAAACACTATATTTTTTGG  
CAATTTTCGGATTTCATCTTATAGCCTGAGACAAATATTTCCAGTTTGTTCTCGATGGTCT  
25 GATTATCGTCCAGGGGATTTTTCAAATAAATGTTTGGAAATATTGTTGATACCGACCA  
TCTCCGTATAAAGCTGGGACTGATAGCCTTTTTCAATATAACTTTGATAAGAAGGTATGG  
CAATGACGCTGATAATGCCGAGTATCGCGACGACTATCATCATCTCAATCAATGTAAACC  
CTTTTTGTCTCCATTTTATTACTCATCATTATTGCTTACATAAGATTGAAGGACGACCACG  
GTATTGGCATCTTACCCCAAGCCTTGGCAGTAACCCGATAAACATTTTCTCCGTCTTTC  
30 ACGCCCAATATTTCGATAATATAACGTGGCATTTTGCTGACGCTTCTCGTGCCTTTCTTA  
TATTCCATCCCTTTCTGTCAATGCACAGGTCGGTAGAATTTGCAGGGCAAGAACGCTTC  
ACCGCCTCAACGGTGGGCTTGCTTGACACGATATTGTCAAAGCCTCTTCATTATCA  
TTATTTGTCCGCACATTCACTGCGGCACACAGACCTTTCCACAGTTTTCTGCTAAATGTA  
ACCTTACTGTCCGTATCATATTCCAAATCCAAAACCTGAAGTTTCGCCTTCCCGCAAAGCC  
35 GCCTCGGCCAAAGACAAAGCCAATTTCTGTCTGATTTCGTTGGCACTGATCCGCTGCTCG  
GTATTGTAAGACTGCGCGGCAGTTACAACCAAAAAAGCCACGACGATCATCACCATCAGC  
ACGATAAACAGTGCAAAACCCCTCTGTCCGTGAGAAGTCGGGATTCCCGTCAAAGTGTTTC  
TGTTTGGCATACATTTTCCCGCGGTATTGTGCGATCGATACGGTAAGCATAAATATGAT  
TGTCTGAAGAAGCGGCAATCTTGGTATCAGTACCGCTACTCAATAAAACCTCCACCCCG  
40 CGGGCGTAACAGCATTTTGGGCGCTGTGCAATTTATCCGTATATTTGAATGTTTCTCTTT  
TGCCGGCATCGTCATCTCAGGACAGCCGGAACATAGATATACCGCACTTTTCATATGTC  
TAACCTTTTTTACGAGCAACTGAGGATTACCCCACTTGCCTTTATCATCCAATTGGAAGC  
GGAACAAACCTTCCTCATCGGCAATCCTGCCGACCGCATAGGCATTGACCACATGCCTTT  
GACGCGCTATATTGCCATTTTGCTCCTTATCCTGATCCGGAATCTTCAATCTTTTTTTTG  
45 CATCTTCTAAAGTAGGGATTGCTTGCCCGGTTTTCGATATTGCGGCACAGCTGCTGACGA  
CGGTAGTCGCGGTGCTTGCAATTAACATCATCGATTCCGTATTGAAAAATCAATGCGCTAC  
CAACCTGGAAAAAATCTGATAATTGATATTTGAAGATTCCGCTATGGGAATAAGTTTAT  
CTATACCGTTCCTTTTTAAGGAAAAAGGAGAATTTTGTGCGTCTGATCGGGAATAACAT  
CAGTTGCAGGATGCTCGGACATATTGAAACAACCGAAGCCGCTGCCATTCTCGCATCGC  
50 GGACAATCAATGTGCGCATTTCCGCAATCTGTTGCGCGGCAAGACGCTCGTTTGCCG  
CATCATTTAATTTCCGGGATGTGAAGTAACTCGATCCGACCGCCATCAGGACAATCATA  
TGAGCAGGCCCCGCAACCAAAAAATTCATAATGGTAAACCTTTTATACCATCATAACTGC  
CTTTTGGTACGTTTAGCATTTTACGTCTCATTTCCCGACCTCCGACCTTGCTGATAAGT  
ATATACGATATTGTGCGCGCTCACCTCAAGATTTCGTACGGGAAATATCCGAATCCCTGC  
55 CGAATCATTTTACCACAATACTTTAATTAAAGTATCCCGTTTTGCCTTATTGTGCAATT  
TGAAGAAAAAGCATTTGCCGACAATGTGCGCGGTTACCCGACGAATCCTTGACAGACGG  
GTAATGGATGGCTGCCGATCCGGCAAGGCATTTTTTCAGCTCATAACTAAATCTCTTCAA

TTGTGCCTCTGCCAATTGCCCTTAGTTTTCATGGCATCAATCGCAAATCGCCATCCAC  
AGCTGATAGTGATGGTTTCCCATGTAAAGATTATAGTTTTTCTGTTGCTGTCCGAATC  
AATGGTCGGATTTCATCAACATTCCTCCATCAGGTTTTGCGTGATTGGCTGACGATGGT  
5 TTGTGTCTCCGCCTCCCTGACGGAAGCGACTGTCCGCAACTGTACAGACAATAGTGCCAA  
AATACCGATGGTCAGAACGAGCATAGCAACCAAGACTTCTATCAGCGCCATACCGGACTG  
GGAATCTTTTCAGGCGGAAGCAATCATTATTCTTCATATTCAATTTTTAAACTGAACTGT  
TATTTATACTGGCACATAGTACGCCGATCACCCCTAGGGCAAACCTTCGACCCTGCCGCTG  
CTGTTAATCAAACACCGCCGAACGGAATTTCTTTTCATCGGCAGAAACCGCCTTCGCA  
10 TCTGTCAACACGATTTGGATATAACCGTCAGAATAAAAAAGCTGGATTGTTTTGTAAGA  
TGCTGGTCTTTTCGTATAACCGAACGTCCTCGTTTTTGATTGAATGTCCAAACTACACGGTCG  
GTGGTCGGCTGAGTCTGACCGAAAGCGATATGGTTGAAGGCATAATTAATCCGCTTATCA  
TTGATATCATCATTCAATACCACACTGCGGAGAAGAATCCTCCGTATCATTGTCATAT  
CCCTTATTGCCGTTTTTGTGCGCGAAAGCCAACATTCCCTGCCCTTCTTGCCGGAGTCA  
15 CATTTATTGTTGGGCGTACCGTCTTTTTTAACCTGAACAGGACAGATATAGACAGGGAGA  
TTGAGCCGGACGGCTTCGCCCTGGAGAAACGCAAAAGGTTGGCAATCCGCTCCGCGTGA  
CTGGCAATGCGGCGGGATGCAATCCATTGGCTCATATTGGGGAGGGCTATCATCGCCATA  
ATGGCTGCAATGACCATCAGATGAGCAGCTCTGTTAGCGTGAAACCTTGTTGTTTTCGT  
GTACACATAAGCAATAGAACGTTAACTGGTAATGTATCGTGGATTAAATCAAACCAAGTA  
CGGCGTTGCGCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTCAAGCACAAGTG  
20 AATCGGTTCCGTACTATTTGTACGGTCTGCGGCTTCGTTGCGCTTGCTGATTTTTGTGA  
ATCCACTATATTTTCAATTATATGCGGGCTGAATGCAAAAATGCCTCAAGACCGCGTTTT  
ATTTTTTAGGGCAATCTCTCAGCATGATTTTTAAACGATTTGCGCTGATTTCCGCTAATAA  
ATTTTTATATAGCCATTTAATCCTCTATCTTTGCCTCCTCGGGAATATAGGCAGCATTGT  
CGAATTTGGTGAATTTGCCGTCCATGTGAGGAAGATTTTACCGACGGGACCGTTGCGGT  
25 GTTTGCCGATGATACATTCCGCAAGGCCTTTTCATGGGTGAGTCTGGTTGTAGTATTCGT  
CGCGGTACATGAACATAATCAGGTCCGCATCCTGCTCGATTGCGCGGACTCCGGAAGGT  
CGACATCATGGGGACTTTCGAATTTCTTCGCCAACGCTTTGAGCGAACGTGAAATCTCTCCCA  
GCTCCGAAGCTCGGTTGTGCGAACGGCCGGATCCTGCCATCAGTTGCAGGTAGTCGATGA  
30 CAATCAATCCAAGCTTATTGTTAAATTGACGGGCGAGACGCGGGGCACGGGCGCGCAGTT  
CGAGCGCGGTGAGACCGGGGTCTCGTCAATGACACGGGCGCGTCCGAGAGTTTGACGA  
CTGCTTCGTTTCAGGCGACCCAGTGTTCGTCTTCGAGCCTGCCGTTTTCAAACGCTTT  
GATCCAACCGTCCGACCGAGCCGAGCATACGCATGACCAGTTGCGCCCCGCCATTTCCTCA  
TCGAGAAAACAGCAACGGGCAGCCTGCCTTCTACGGCAACGTGTTCCGGCATATTGATAG  
35 AAAAGGCGGTCTTACCCATAGACGGACGACCGGCAACGATAATCAGGTGCGCGGGTTGCA  
GACCCGAGGTTTTTTGTCGAGGTGATGAACCCCGTCCGACGCGGTAACCTTCATCGG  
GATTGTGCGCGGAGTAGAGCATATCGATGCGCTGTACGACTTCTTTCAGCAAATCGGGCA  
TCTCCAAAAGCCCTGCTTGGATTGCGGCTGCTTTCGGCGATTGGAATACTTTGTTTT  
CCGCTTCGTTCCAAAAGCTGCCCGCGTCCCTGCCTTGCAGATTGTATGCGCTGCGGGCGA  
40 TTTCCGTCCCACTTCGGCGAGTTGGCGCATAATGGAACGCTCGCGCACGATTTCCGCGT  
AGCGGCGGATGTTGGCGGCAGACGGGTGTTTTGCGCCAGCGTAATCAGATAATCGAATC  
CGCCTGCCGCTTCCAATTTCTGTTCCGCTGCAAATCTTCTGAACCGTAATCACATCGG  
CGGGACGGCTCTCATTAAATCAATTTGGCAATGGATCGGAAAATCAGGCGGTGTTTCATGCC  
GGTAGAAGTCTTCACCGGAAACCACATCGGCAATCCTGTCCCATGCCGATTTTCCAGCA  
45 TCAACCCACCCAAAACGGATTGTTCCGCCTCCATTGAGTGTGGGGGCAGAGACAATGCGC  
CGACCTCACGGTCTTCAGACGGCATGGCTGCGTAATCGTTTCATGGTACATCCTATCTGTC  
GTGCCGAAATTGCAATCTTCTATTATAGCGTAAAGCAGGTTTAATTGGTTTCCGCACCGC  
AAAACAGGTAGAATACACGGGCTGCCGAGTTATTTGCAGCAACACTGCCAAAATACAACA  
TTTAAAACAAATATTCAGGAGTACAAAATGGAACATAAGCTGCCGCAACTGCCTTATGAAC  
50 TGGACGCATTGTCCCCGCATCTGAGCAAAGAGACTTTGGAGTTCCTACGGCAAACACC  
ATCAAACCTACATCACCACCTGAACAATCAAATCAAAGGCACCGAATTTGAAAACCTGC  
CTTTGGAAGAGATTGTGAAAAATCTTCAGGCGGCGTGTCAACAACGCGGCACAACTT  
GGAACCAACCTTCTACTGGCTGGGTTTCACGTCCAAAGGTCAAGGCAAACCTGCCGGCG  
AATGGCCCGCCCGCATCGACGCGAAATGGGGCAGCTTCGAGAAATCCAAGAAGCGTTCA  
55 ATGCCGTGCGCGGCGGCTACTTTTCGCTCCGTTGGGCGTGGCTGGTAAAACCCCTGCCG  
GCGGATTGGATTGTTGTTTCTACTTCCAACGCGCTACGCGCTGACCACTGAAAACACGC  
CGTGCTGACCTGCGACGTGTGGGAACACGCCTATTACATCGACTACCGCAACAGCCGTC



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CCAACCTACCTGAAAGGTTTTTGGGAAATCGTCAACTGGGACGAAGTCGCCAAACGTTTTG  
CCGCCTTGTCCTGATTTTTGTTAATCCGCTATATCATTTCGGGTAGATTTTTGCGGTATT  
GAATTTAGTTATTTCCGATAAATGCCTGTTGCTTTTTATTCTAGATTCCCACTTTTCGT  
5 GGAATGACGGTTCAGTTGCTACGGTTACTGTCAGGTTTCGATTATGTTGGAATTTTCGGG  
AACTTATGAATCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAGAACAACAGCAATA  
TTCAAAGATTATCTGAAAGTCCGAGATTCTAGATTCCCGCTTCGCGGGAATGACGGAAA  
GTGGCGGGAATGACGGGATGTAGGTTTTCTTAACCCTGCGTCCTAGATTCCCGCTTTTGC  
GGGAATGACGGAAAGTGGCGGGAATGACGGTTCGGGCATTCCTTAAATTACCCGTGTATC  
10 GCTGTAAATCTTAGAGATGGCGGAATATAGCGGATTAAACAAAACAGTACGGCAAGGCG  
AGGCAACGCCGTACTGGTTTTTGTAAATCCGCTATAATTGATGAAACGGGTAAAAAAGT  
GTTGCCATCGCCTGTTCTTCTTGTCGGATACGCTTAAATAAGACCAGCAAATAAATGGGC  
AGGCCAATCAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 55>:

15 **GNMAB42F gnm\_55**

TGACCCGGCATTCCCTTCCTGCCTGCGTTCGTGGACGCTTTTTTCAAATTCCGATTCCGC  
CGTTTCGTTTTTCGGGAACACGATTTCGCCGCGAAGATGAGAAAACAAACGTTTCACAAG  
GTTTTCGTCCACGGCGAACAATTCCGGTATCGCCTATCCTGCTTTTGCTGAAAATTTTCATG  
GAGCAGGTTTTCTTTTTCTTTGTAATTGTCGGTTTTGACGGCGAGGATGCGTTCCAATCC  
20 GGCAACGTTTCGCATAACCGTTGTTTTCCAAATGGCGCATCTGCCTTCAAATTTGCTTAC  
ATCCGAAATGCCGATTTTATACACGCCCTTGATGACGGTTTTnATCAGATAGACAATGCC  
TGACTTTTCCATATCGATGTTTTCAAGTGTTTTCGAGCCTTCAGACGGCATCGGATTAT  
TTCTATGCCGTCTGAAACCGTTAAGTATCAAATATTATCGACACTCTGGCCTGTnAGCG  
CGCGTTGGATGTTGCGGTTTCATGCGTTTGGCGGCGAAATnTCGGTGATGCTGCCGAGTT  
25 TGGCGG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 56>:

**gnm\_56**

CCGCACTGATTTTCGCAATCGGTACATATATCATCAGCGCGGGCGGCAAACGCCTGCGTC  
30 CGATTATGACGATTTTGGCGGGTAAGGCGGTCGGTTATGATGACGAGAACTGTATTTCG  
TGGCGGCGATGGTCGAGTTTATCCACACTTCCACCCTCCTGCACGACGATGTCGTCGATG  
AAAGCGATTTGCGCCGTGGGCGGGCAACGGCAACAATCTGTTTCGGCAATGCGGCGGCTG  
TGTTGGTTGGCGACTTTTTATACACGCGCGCCTTCAACTGATGGTTGCCTCGGGCAGTA  
TGCGCGTTTTTGAAGTGATGCGGGATGCAACCAACATTATTGCCGAGGGCGAAGTCATGC  
35 AGCTGATGAACATCGGCAATACGGACATTACCGAACGAACAATATAICCAAGTCATCCAA  
TATAAACGGCAAATTTGTTTGAAGCTGCCGCTCAAGTCGGCGCAATTTTGGGCAAGGCT  
TCCCCCGAACACGAACGGGCGTTGAAAGACTACGGTATGTATGTCCGTACGGCATTCCAA  
ATTATTGACGATGIGCTGGACTATTCTGGCGAAACCGACGAAACGGCAAAAACCTCAGCGA  
CGATTTGGCGGAAGGAAACGACTTTGCCTTTGATTTATCTGATGCGTCAGGGTCCGAA  
40 CA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 57>:

**gnm\_57**

GGCTGCTGCGAGGAAGATGTGCGGGGCGGGTTTGAATGTGCGACGGCGGCAGGGTCGGC  
45 AATGGCGTCGAAGAAGTGGGTGAGCCCCATGCGTTCCAGCAGGAACGGGCCGTTTTTACT  
GGCGGACGCAAGGGCGATTTTTTTGCCGTTTGCCCTCAATGCTTCCAGCAGGGGCAAAAT

GCCGGGATACACGTCTTCGGGTTTGACTGCCTGAATCATCTCGACGTAGTTGTCGTTTTT  
ACGGCGGGTCAGTTCGGCGAACTCGGCTTCGCTGACGGTTTTGCCGCGTGCGCGAGGAT  
GCGTTTTGAGCGAATCGTCGCGCGACACGCCTTTGAGCTGCTCGTTAACTTGCGGTCAAT  
GCTGATGCCCAGTTCTTCGGCGAGCTTTTTCCATGCGCGGTAGTGGTATTCGGCGGTGTC  
5 GGTGATGACGCCGTCGAGGTCAAATAGGACTGCAGTGAAAGTCATTTTGCGCCCTCCTTA  
TTTTTCCAACGCAACGGTGTGGCTGCCGTCGAGCGTGATGTCTTTGCCGTACACCTGCAA  
ATCGAGCGACTCGCCTTTGAGCAGAGTGAAGACGACGTTTTCTTTGCCGACGCGACTTT  
AATCAGACGGCCGCGGTAGTTGATGTGGAAGGCGTAGCCTGTCCACGCACTCGGCAGGAA  
CGGTGCGAAGCTGAGTTTGCCGCCCCAGTTTTTCATTTGGGCGAAACCTTGACGATGGC  
10 GAGCCACGAGCCGGTCATGGAGGTGATGTGACGGCCGCTTCGGTGTCGTTGTTGTAGTT  
GTCCAAGTCCAGGCGGCGGTGCGCTGGTACATTTCCACGGCTTTTTCTTTGCCCAG  
TTCGGCGGCGAGAATAGAGTGAATACAGGGCGACAGCGAGCTTTCATGCACGGTCATCGG  
TTCGTAGAAGTCGAAGTTGCGGCGTTTTTCGTGATATTGAAACGGTCGCTGAAGAAGTA  
GATGCCTTGCAATACGTCCGCTGTTTGATAAAGGGCGAACGCGAGTTTTGTCCCACGA  
15 CCATTTTTGGTTGAGCGCAAATCGTCGGGCGAAAGCGCGGACACGGGCGGATGTCTTT  
GTGAGGAAGCCGTCGTGCTGCACGAATACGCCGAGTTCTTCGTGATGCGGACGGTACAT  
ATTGCGCGTGATGTCCGCCCATTTTTCCAACTCGTGCGCACGCACGTTCAAATCCGGACG  
CGGGTATTTCCCAAGGCTTCGCGGGTGTAGTCCAATACCCATGCGGCGAGGGTGTGGT  
GTACCAAGTTGTTGTGATGTTGTTTTCGTATTCGTTCCGACCGGTTACGCCGTGAATCAT  
20 GTATTTGCCGTTGCGTTTGGAAGAAGTGACGCGGTCCGCCAGAAAGCGGGACACTTCGAC  
CAAACCTTCCAAGCCTTCTTTGGCAAGATAGCCCTCGTCGCCGGTGTAGTTGGTGTAGTT  
GTAGATGGCGTAAGGAATCGCGCCGTTCGGTGGATTTCCTCGAAGGTGATTTCCTATTC  
GTTGTGGCACTCGATGCCCCGTAACGTTACCATCGGATAGAGTGCGCCCGCAAGCCCTG  
TTCGCGCGCGTTGTGCTGCGCCTGCGGCAGTTGGTTGCGGCGGTATTGCAGCAGGTTGCG  
25 GGTAACCTTCGGGTTTCGGCCAGTGCGAGGTAGAGCGGTACGGCGTAGGCTTCGGTGTCCCA  
ATAGGTGCGCGCCCGTATTTTTTCGCCGTAAGCCTTTCGGGCGGATGTTTCAGTCGCGC  
GTCTTCGCCGTAGTAGGTGGAGAACAGTTGGAACAGGTTGAAGCGGATGCCCTGCTGCGC  
TTCGCTGCTGCCCTTCGATGACCACGTCCGCGATTTCCTAACGGTGCAGCCAGCCTGCTTT  
GTGCGCGTCCACCAAGGTTTTCAAACGCAACGCTGCAATTTTTTCGCAAGGCGCGGCC  
30 TGCGGCTTTCAGTCTTCCAAGCTCTGATAATCGCGGCTGGTGGTAACAATCACGCGTTT  
TTCAAAGGTTTCGGGTGTGCTGCCGACTTCGGATTCAAAGAATTGGAGACCTGCCAGTC  
GGTTTGGCTGCCGCCGAGGGCTTTGAAGCTGCCGGCAAAGGTTTGTGCGCGTTGACGAT  
GAATTGTTCCACGCCGAAGGGATTGGCGACGTTTGGGCGGCAATGTAGGAGAGACTGTC  
TGAAACGCCCTTGTCCAATACCTGCCAGAATTTTTCTTCGTAGTTGGAGTCITTCGTTTTT  
35 CACGTCCGGCATCGATGATGGAATCGATGCGGACTTGGTGGGTTTTACCGTCAACGGATAC  
GGCTTCCCAGCGGATGACCGCCAGCTCTTTTTGTGCGACAGACAGGAATTTGCACACATT  
GAAACGCACACCGAATACGGTGAACGAGCGGCGCAACACGCCGTGCTGCATATCGAGTTC  
GACGGAGGAGCGACGCAACGTCGTTTTTCGCCAAGTCCACTTCCTGCCCGTCGACAAAGAT  
TTTGACTTTGCTGAAATTGAACGCGTTGATGGCTTTGCCGAAATATTTGGGATAGCCGTT  
40 TTTCCACCAGCCGACGCGGTTTTGTGCGGGAACACACGCCGCGATGTAGGTGCCTAA  
GTGGCTGTGCGCGGAATAGGTTTCTCAAAGCTGCCGCGCATACCCATATAGCCGTTGCC  
CAAGCTGGTCAGGCTCTCTTGCAGCCGTTTGTGTTCTTTTCCAGTTTTGCCGAACGCAG  
CGTCCAAGGGCTGATTTCCATGATTCCTGTGTACATTTATGAAGCTCCTGTTTGGATTGA  
TTTGAGGGAATGGTGAAATCTTATAGTGGATTAACAAAAATCAGGACAAGGCGACGAAGC  
45 CGCAGACAGTACAAATAGTACGGAACCGATTCACTTGGTGCTTCAGCACCTTAGAGAATC  
GTTCTCTTTGAGCTAAGCCGAGGCAACGCCGTACCGTTTTTGTAAATCCACTATAAAAA  
GGTCGTCTGCAACCGGTGTTAGGAAGCTCCTAAGAAAGGGATTTCGATGCCGTAAGCAATC  
GTCGCCCTCCCTGGTATCACCTTGTTCAGACGAATATTGCCGAACTCGGGCCAATTACAG  
CTGTGCGGCGAGCGTCTGCGCCTCGGTGCGCAGCGCTCGTAAACGCCCGCATCGTGCCGC  
50 GCGAAATCCTGCGGGGCGGCGGTAAAGATGACCAAGCCATTGCGGTGCTGTATATGCTG  
ATACGACGGCGGCGTCCGGCTTGCAACACAGCGGCGGACGCGCTATATCGGACGGCACG  
CGGTAAGCGTCGTCAAAACCGGCCCCGACCCGTTTTCGCGGCGCAGGGCGGCAACGGCGCA  
TCCAGCGGCTTGGGCGGCTGAAATCAAATACTTCGAGGTCGTCTGAAACCGTTGAGACG  
GGCAGTTTTTCGGCATCGGCCGCGATATGTCCGCCCTGCGGAATATGCAGAACCGCATCG  
55 TGCAGGCCCCGCGTCCAGCGCCAGTAAATGTGCAGCGTCGGGTGCAACACCGTGTGCGCG  
AGCGCGGTGGCGCGATAGCTAACGGTAAGCCGGTCGTCTCGTCCAAGCGGTAGGAAATA  
TCCAAATCAAATCGTTGGGATAACCGTCGGCCGACTGTTGCAGGCGGCTGCGCAGCACC

ACCGAACGGCCGCTCTGCCGCCACCGCGTTGAAACGGGTAACGGCCAGCCCGTGCGAACCG  
CCGTGCAGCGCGTTCTGCTTCGTTGGCCTCCACGCGGTAAGTCTGCGTTGATGTGCG  
AACGCCGCACCGCGGATGCGTCCGGCCACGCGCCCTATCTGTTTGTAACTCTGAAACGGA  
TTGTCCGCATAGGAAGCCGCATCATCGAACGACACCACGAGGTTTTCGCGCACGCGCTCT  
5 GCCAAAACGGAATAATCTGCACAATCCCGCCCAAGTCCAGCACGCAGACACGCGTACCA  
CGCCGTTTGACAGCACATAGCCGTTACGGCACGCCCCGTCGATCAGACCGAAATCGCGG  
GTAGCGGGGTATCGCTCATCGCTCAAACCCCGCCGTGTGTTTCTTAATCAGGAACACG  
GAAAACGCGCCCAGCAGCAGGACGACGCCCCCTACCAAGAACATAGTGGCCTGCAAGCCG  
CCCAGCATAGGGAAAAGCACGAACTCAACAGCGAAGCGACGATTTGAGGCATACAGATA  
10 GAGCCGTTAAACAAGCCCAAGTAAGTGCCCATATGCTTGCCCGACAAGGCGTTGGTCACA  
ATCGTCAGCGGATAAGTGATAATGCCGCCCCAAGCGATGCCGATTAAGGTATAAGACAAC  
ACCAGCGCGTATTGGTTGCCGATGAAGAAAACGGAGAAAAAGCCGAGCGCGCCCAAAGCC  
AAACAGCCGAAATAACCCGCCTTATGGTATTTATTCGGCACTTTTCGCCAATACAAACGAA  
CAAATCACCGCCGCAACCGACTGCACCGCCGCCAAAACGCCGTACCAGTTACCCGCCTCC  
15 TGATAACCTACGGAAGACGCATCGGTGGTGTGCCAGACGTTTTCGCAATCGCGCCTGCC  
GAGTAAGTCCACATATATTGGAAGCGGAACACGAGAGAAGTTCACCAAAGTAACCGTC  
CAAACGCCTTAGGCGCGGTTTTCAAGAGTTCGATCCAGTTGGCTTTTTCTGATTTCGCG  
GCGACATCGATGCCGTGGTAACGGGCGTAGGTTCCGGATCGTATTCCTTCACTTTGAAA  
ATCGTGAACGCGCTGGTAATCACAGCAACGCGCCACCCACATAAAACGCCACGACCACG  
20 GTCTGCGGCACAACGCCTTTCTCGGCGGTGTTTCGCCAAACCGATATACGCAAAACACAAAC  
GGCAGAATCGCGCCACGACCGCGCCCGTATTTGCTAAGAAAACCTTTGAATCCCGTAGGCG  
TAGCCTTTCTGCTCCTCGTTGACCATGTGCGCGACCATCATCTTAAACGGCTGCATCGCC  
ATATTTGACGACACGTCTAACAGCGCAATCATCAGCGCGCCGAACGACAAAGCCGCCAGC  
GACGCATAGCCGAAACCGAAGCTGCCCCGAGTTTCGGCATCAAATCATCACAATAACCGCA  
25 ATCAGCGTGCCATAAAGCAGATACGGCAGACGGCGGCCGCCAAACGCGGCTTCCAAGTG  
CGGTTCGGAGTAATGGCCGACAATCGGCTGCACCAGCATCCCCGCCAGCGGCGGAGGATG  
AAAAACAGCCCAAATTGTGCGGGTCTGCGCCTAGCGTTTGAAAAATGCGGCTCATTTCG  
GAGCTTTGAGGGTAAAGGCGCTCTGAACGCCGAGAAAGCCGAAACTGAGCATCCAAATC  
GTGCTTTTGGCAGCGCGGCAACCTTGTGCTTTGAGGCGTATATTCGACATA  
30 AGGTAAATCCTTTTTTGTATTGAAAAGTATAGTAGATTAACAAAAACAGTACGGCGTTG  
CCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAGTGAATCGGTT  
CCGTACTATCTGTACTGTGCGGCTTCGTGCGCTTGTCTGATTTTTGTAAATCCACTA  
TATTTGCTTTGAAAATCCGAAATGGTTGCCGGGGCGCGATCCCCTATCATTATTATTT  
TTTTGTCTATATAATTTCAAAGGGATAAGCGGATTTTATGAATCCTGCCCGATTTTGGA  
35 ATACCGGTTTCGCGGATAAACTGGCTTAAATCAAATTATCGGTTAAAATGGCCGCTGAAA  
TTTGTGTTGATGAAAACGAGAAAACCATGTCCCAACAATACGTCTATTCTATGCTGCGCGT  
GAGCAAGGTTGTGCGCGCGCAGAAAACCATCATTAAAGATATTTCCCTTTCTTTCTTCCC  
CGGCGCGCAAAATCGGCCGTGCTCGGTTTGAACGGCGCGGCAAGTCCACCGTGCTGCGGAT  
TATGGCGGGCGTGGATAAGGAATTTGAGGGCGAAGCCGTGCCGATGGGCGGCATCAAAT  
40 CGGCTACCTGCCGCAAGAGCCTGAGCTTGATCCGGAAAAAACCGTGCGCGAGGAAGTGA  
AAGCGGTTTGGGCGAAGTGCTGCCGCGCAGAAACGTTTGAAGAAGTGTATGCCGAGTA  
CGCCAATCCTGATGCGGATTTTGACGCGTTGGCAGAAGACGAGGCGGCTTGAAGCGAT  
TATTGCGGCAGGTTCTGCCACGGGCGGCGGTGCGGAACACGAATTGGAAATCGCCGCCGA  
CGCGCTGCGCCTGCCGAATGGGATGCCAAAATCGATAATTTGTCCGGCGGTGAAAAACG  
45 CCGCGTTGCTTGTGCAAACTCTTGTGAGCAAGCCCGATATGCTTTTGCTGGACGAGCC  
GACCAACCACTTGGATGCGGAATCGGTCGAGTGGCTGGAGCAATTTCTCGTGCGCTTCCC  
CGGCACAGTCGTTGCGGTAACGACGACCGCTACTTCTCGACAACGCGCCGAATGGAT  
TTTGAACTCGACCGCGGCCATGGTATTCGTTGAAAGGAATTACTCGTCTTGCTGGA  
GCAGAAAGAAAAACGCTTGAAAACGAGGCAAAATCCGAAGCCGCGCGGTGAAGGCGAT  
50 GAAGCAGGAATTGGAATGGGTGCGCCAAAATGCCAAAGCCGCCAAGCCAAGTCCAAAGC  
GCGTTTGGCTCGTTTGAAGAAATGAGCAACTACGAATACCAAAAACGCAATGAAACGCA  
GGAAATCTTTATCCCGTTGCCGAGCGTTTGGGTAACGAAGTGATTGAATTTGTAAATGT  
TTCCAAATCGTTCCGCGATAAAGTGCTGATTGACGATTTGAGCTTCAAAGTGCTGCGGG  
CGCGATTGTGCGCATCATCGGCCCGAACGGCGCGGTTAAATCTACGCTGTTCAAATGAT  
55 TTCGGGCAAGAGACGCTGATTCCGGCGAGGTGAAAATCGGACAAACCGTGAAAATGAG  
CTTGATTGACCAAGCCGGAAGGTTTGCAAAACGACAAAACCGTGTTCGACAACATTGCG  
CGAAGGCCGCGACATTTTGAGGTTGGTCAAGTTTGAATTCGCCGCCCAATATTTGGG

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5 GCGTTTCAACTTCAAAGGCAGCGACCAAAGCAAAATTGCAGGTCAATTGTCTGGCGGCGA  
ACGCGGTCTGCTGCACTTGGCAAAAACCTTGTTGAGCGGCGGCAATGTATTGCTGCTGGA  
TGAACCGTCTAACGACCTTGACGTGGAAACCCCTGCGCGCGTTGGAAGACGCATTGTTGGA  
ATTTGCCGGCAGCGTGATGGTGATTTTCGCACGACCGTTGGTTCTCGACCGCATCGCCAC  
10 GCATATCTTGGCGTGTGAAGGCGACTCTAAATGGGTGTTCTTCGACGGCAACTATCAGGA  
ATACGAAGCCGACAAGAAACGCCGTTTGGGCGAAGAAGGCGCGAAACCGAAACGCATCAA  
ATACAAACCGGTAACGCGTTAACCTCCGAAACAATGCCGTCTGAAAGGCTTTCAGGCGGC  
ATTTTTACAAGGCAGCACCGTTTAAACAGCATTGCAATCCTCAAGACAATCAAAGTCAT  
CACC GCAGCCGCATATCGTCCGCCATAATGCCAAACCGCCGTGCAGATTCTTGTCAAAA  
15 CCAACCGACGGGAGACGGTTTGAGCGCGTCAAACAGACGGAATAGGACAAATGCCGCCAG  
CCACCAGTCCACCTGAACGGCACAAACGCCAGCACAAACAGCATGGCGACAATCTCGTC  
CCAAACAATCCCACCGTGGTTCGCTGACACCCGTTTACGTTCCGCATAAGCGCAAATGCG  
TATGCCCCACATAAACAGCACGATACAAAAAAGCCAGCAGTAGCCCGTCTATGCCGAG  
CAAAATCAGCACAAACGCCAAAGGCAGTGCCGCCAAAGTGCCGAATGTGCCCCGGCGCGAA  
CGGAGCCAGCCGCTGCCGAAACCGAAAGCCAAAAACACAACGGCCGTTTCAACAGCCA  
CGCAAAGTCAGGTTTAAATCAGCCAAAATGATCGAATC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 58>:

**GNMAB61F gnm\_58**

20 CGGTCTTGGCGCACGCGCGnTCTTTCGGCATACATCACGCCCCAAATTGTTTTGGGCTTGG  
GCTACCCCTGCGCTGCCGCTGCCGAAACCATCTGACCGCTTCGACATCGTCTTGGCGC  
ACTCCACGTCCTTCGGCATATATCACGCCCAAATTGTATTGGGCTTGGACAACCCCTGC  
GCTGCCGCTGCCGATACCATCTGACCGCTTCGGTATCATCTTGGCGCACGCGCGCCCGT  
25 TGGCATACATCCAGCCCAAATTGTATTGGGCTTGGGCTAACCCCTGTTCCGCCGCTGCC  
GATACCATCTGACCGCTTCAGCATCATCCCGCGCACGCGCTCCTTTGTAATACATTGC  
GCCCAAATTGTATTGGGCTGCTGCATTTCCTGTGCTGCCGCTGCAAGTTTTCCGAAAA  
TCCGATACGTATCCGnCCACACCGGTTCGTTCAAGCCCAAGGCAATCAGGGCGGCGGCA  
AGCATTGACTGTCTGTTTCATGTTTnACTTCTGTTTTAGTATAAGGCGGGTTTCAGCC  
ACCGnTAACGATAGGGCTGGGCGGATT  
30

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 59>:

**gnm\_59**

GTACCCTGCTCAAGCAGTACAATCCCGAGTATTCGGGCATTTTCATCATTTTTTAAGACAG  
GAAGGGACTGATTGTGAACAAGTCTGAATTGATCGAAGCGATTGCTCAAGAAGCCGAsAT  
35 TTCCAAAGCCGCCGCACAAAAAGCTTTGGATGCCACTACCAATGCAGTAACCACCGCCCT  
GAAACAAGGCGACACCGTTACTTTGGTCGGTTTCGGTACTTCTACGTGGGCGAACGTGC  
GGAACGCCAAGGCCGCAACCCCAAAACCGGCGAGCCTCTGACCATTGCCGCCGCCAAAAAC  
GCCTAAATTCGCGCGCGGCAAAGCTTTGAAAGACGCACTGTAAGCCGTTTTTTATGAAAA  
AAGCCGATTCTTTAAAGAATCGGCTTTTTTATCGGTCCACATTATTCTGATTTCAAATCG  
40 GCAACACACTGCTTGTACGTGCTTCAAAGGCATTTCGCGCGCCGAGCAGGTCAAGCTGT  
TCTTGTGCGCCGAGTTTGCCGAAGGATCTAATCTGTTTCTCGCTCAATCTGTCCAAAGGC  
TGCTCCACATACATTTGCAGTAGTCGACGGCGAGGCGGGTATTGTTTGAATCTAAACCG  
CGGGCCCGCAAATCGTTTTGCCATTTTTCGGCAAACGGAATATTCTTCACGCAAGACTCG  
ACAATTTCTGTTTTGCCTGCGGTTTGGACATCGCGCATTGGGAGAGCAGGGCGGTTAAA  
45 GCGAGCAACGCCAAAATGACCCACGCCCAAATGCGGATGGTGCGGATTTTGGCTTTTGCT  
TTTTTTCGCGCGCGCAACCTGCTCTTTCGTGAGCATTTTCGTGTTTCGGCTCAGTCATGCAG  
GCTTTCCATGCGGATCATGGTAATCGGTTTTTCCACGCAATCCAGTGCTTCGATGGCTGC  
GATTCCGCACTTGATGTGTTTTTCGACCGTGTGTGGTTCAGAATCACGATTTTCGGCAGT  
GGTCTGATCAATCACGCCTTTTTGAATCAGTGCTTCGATGGACACGTTTTCTTGTGCCAA  
50 CAGCGCGGCGATTGCCCCAGCGTGCCCGGTTTCGTCTTTGGCTTGGACGCGCAGGTAGTA

GCTGCTGGTAATTTTCGTCCATAGGCAGGATGGTTTGCCTTGGACTTGC GCGGGTTGGAA  
CGCCAGATGCGGTACGCGGTGGGCGGTATCGGCTTCAACCAGGCGGGCGATGTCGATGAT  
ATCGGCAACCACGGCGGAAGCGGTTCGGCAATGCGCCCGCGCCGCGCGTAATATAAGGT  
TTCGCCAACCATATCGGCGTTGACGCGCACGGCGTTTCATCACGCCGTTGACGTTTGGCAA  
5 GAGGCGGCTTTTCGGGAATCAGGGTAGGGTGGACGCGCAGCTCGATGCCTTTGCCGGTTT  
GCGGGTAATGCCAACAGTTTGTGCGATAGCCAAGTTCTTCGGCGTATTTGATGTCGCG  
GCTGTCGAGTTTGTGATGCCTTCGAGGTAGCAGGCGGAAAAGTTTCATCGGCGTGCCGAA  
TGCCAGTGCGCTCATGATGGTGATTTTATGGCCCGCATCGTTGCCTTCGATGTCGAAGGT  
CGGATCGGCTTCGGCATAACCCAATGCCTGCGCTTCTTTTCAGTACATCGGCAAACGCGCT  
10 GCCTTTTCGCGCATTTTCGGAGAGGATGAAGTTGCTGGTGCCGTTAATAATGCCGGCGAT  
GGATTTAATCCTTGTTCGCCGCAAACCTTCGCGCAGGGCTTTGATGATTGGGATACCGCC  
CGCTACTGCCGCTTCAAATTGGACGATGACGTTTGTTCCTTCGCCAGCGGGAAGATTTTC  
GTTGCCGTATTCGGCGAGCAGTTTTTGTGGCGGTAACGATGTGTTTGCCTTTTCAAT  
GGCTTTCAACACCGCATCTTTGGCAATGCCGGTACCGCCGAACAATTCGACGACGACATC  
15 GACGCTTCACGTGCGACCAAGTTTCAACGGATCTTTGACAAAGGCTGCGGACGGGCAGGT  
TTGTGCGGGCTTTTCTTCACTCAAATCGCACACGGCAGAAATACGATTTTCGCGCCCCAA  
GCGACGGGAAATTTCTCCGCGTTGTCCCGCAACACGGCAGCCGTACCGCCGCGGACCGT  
ACCCAAACCTAAAAGACCGATGTTTACTGGCTTCATTGTGTCTCCTTGTAAGCCGACTGA  
AATGTAATATTGAAAGACGAAAATATCCGCTGCCGATATAATTGTGCCGCACTTTGAAT  
20 CAAATGCCGTCTGAAATCGGCAGGCGGGTCAGATGAAATCTGCCAATCCTACATGAATTT  
GTCTGATTTTGCATCCCTTTTCGGTGTAGATGATGCGGCAACGGGGTAAAAAATGTTGTT  
TGAAGAAAATCCGATAGACGGACAGTTTTCGGAATATGAATGCGGTGCGGGCGGAATCCG  
GCTGGCGGGGCAAAGTTTCCATAAACCCGTGCTTGTACATAAGGATTCCGTCTGCCTGTC  
GCAATGCCGAACCTTGTCCGATCTGACTCCGGAAAACCTGTTGTCCGACGTCAAACCTGT  
25 TGACTATCCGGAAATATTGATTATCGGGACGGGCGCGGCTCAGGAGTTTATCCATCCCAA  
AATCATGGCGGATTTTTCGGAATCGGAATCAGCGTGGAATGCATGAATACCGATTCCGGC  
ATTACAGACATTTGGTTTTCTTGCCTCGGAAGGGCGCAGGGCTTGGGCTTGGCTTCAGCC  
GTAAATTTCCGTTTCAGACGGCATCGGCACTGACTTTTCAGGTAAAATACGGGCTTTTCC  
CGCCCGACGATGTTTCCGTTATGATTGAAATCAAAAACCTCACCTGCAACGCGGTTTGA  
30 AAGTCTGCTCGACAAAGCCAACGCTACCGTCAATCCCGGTACGCGCGTCGGTTTGATCG  
GCAAAAACGGAACGGGCAAATCGAGCCTGTTTGCCTTAATCAAGGGTGAAATCACTCAGG  
ACGGCGGCGATGTCTCGATTCCGAAAACTGGCGGCTCGCTTCCGTTTCCCAAGAAACGC  
CCGATTTGGATATTTCCGCTTTGGATTACGTTTTGCAGGGCGATGCCGAGTTGCAGGCTT  
TTCAGACGGCATTGAGGCAGGCAGAGCGCAAAATGACGGCATGAAGCAGGCGGAATATC  
35 ATGCTAAATTTGGAAGAAATCGACGCTTATACCGCGCGCGCGCTGCGGCAAAATTTGTGA  
ACGGGCTGGGTTTTTCGCAAGAAGAACACAGCCGCCCGTCAAATCCTTTTCCGGCGGCT  
GGCGTATGCGCCTGAATCTTGCAGAACCCCTGATTGCGCGCGCGATTTGCTCTTGCTTG  
ACGAACCGACCAACCACTTGGATTGGAATCAAAACCGTCTTGTGGCTGGAAAACCACTTGCTT  
CTTTACCTGACGCAATCATCATTTCCCATGACCGCGATTTTCTCAACGCGGAAACTA  
40 CCAAAACCAATTGAATTATCGCAGCAAAAACCTACGCAATACGGCGGCAATTACGATTTTT  
ACCAAAACGAACGTGCGCAGCGTCTCGCGCAACAACAAGCTGCCTATGTCAAACAGCAGG  
CGCAATCAAACATTTGCAATCCTTTATCGACCGCTTCAAAGCCAAAGCCACCAAGCCG  
TTCAGCGCAAGCCGATGAAGCTTTGGCGAAGCTCGAACGCATCGCTCCCGCGCATC  
TGACAGCGAGTTTTCTTTGAGTTTTACCATCCCGACCATCTGCCAATCCTTTGTAA  
45 AGCTAGAACACGCAGATTTGGGTACGAAGGCAAACTGTTTTGCACGACATTACCCTGT  
CGCTGAAAGCGGCGCGGCTATGGTTTATTGGGTGTCAACGGCAGCGGTAATCTACCT  
TTATCAAAGCTTTGGCAGGCACAATCGATTTACTCTCCGGCAGCATCGTCCGTTCCGAAA  
AACTCAATATCGGCTATTTTGCCCAACACCAACTCGATACCATCCGCTCCGACCAAAACC  
CTGTTTGGCATATTTCAGCAGCTTCTCCCGAAGTACGCGAACAAGAAATCCGAAATTTCC  
50 TCGGAGGCTTCAATTTTGTGCGGATATGGCGTTGCAGAAAACCGAACCATTTTCCGGCG  
GAGAAAAAGCCCGACTCGCTCTTGCCATGATTATCTGGCAAAAGCCGAACCTGCTGCTGC  
TTGACGAGCCGACCAACCATTTGGATTTGGATATGCGCCACGCCTTGACGCTCGCTCTGC  
AAAGTTTCCAAGGCGCCTTAATCGTTCGTATCGCAGCATCGCAGCCTGCTTGAAGCCACGA  
CCGACAGCTTCTCTGATCGATAAAGGCCGTCTGAAGAACTTCGACGGCGATTTGAACG  
55 ACTACCGCAATGGCGTTTGGCACAGGAAAACGCCGCGTTCGCGCCGCGCAGCATCCGCAC  
AAAGCCAAAGCCGCAAGACACCAAGCGCATCGAAGCGCAAAATCCGTCAGGAAAAAGCCC  
GACGCGGCAAGCCGATACAGCAGAAAATAGACCGTGCCGAAAAAGAAATGGCGCAGCTTT

CCGAAATTCAGACGGCATGTGAAGCATTTTTAGCACAGAAGAAGCTTACTTCGAGGAAA  
ACAAAGAAAAATTGCAGGACACCTTATCCGAGCTGGCAAAAGTCAAAACACAACCTTGCCC  
AAATCGAAGAGGTTTGGCTGGCTTGCCAAGAAGAATTGGAACAGATTGAAACTGAAATCG  
AGAAACAGTTTGCCGAGCGATAAAGAAGCGCGGGCAGGGTGCTTATCTTTGCCTGCCAAT  
5 AACGGTATAAATTCGGGCGTTATCACCGCCTTTTACCGGTATAAACATCAGACTTTTTGCC  
GCCTTGGGTCTCCTGTCCCTTTCCGGCGCGGGCGCAAGCCTCCGTATACCATTGCAAC  
TCAAATGGCAAAAGCGTATATACATCAGCCCCAGCAGGATTGTGCGCCGATGCGGATTTA  
CCTAAATCAGCAGCCATCAGGGAGGCGGATACCGCTGAAAATTAAAAAACTCAGTTAA  
GAAGCCAAAATACACATAGAAAGTAAAAAGAAAAACAAAAACCTGCCGGGAAAAAGAAC  
10 AAGCAGGCTGCCAAAGCCCCGAAAGAAAATCAAAGCAACCAACCGAAAAGAAAAGCCCCG  
TAAAACGCCAAGAAAGCATTACAAAAAATACCAAAAAATCAAATGATTATCCGAAAATCA  
AGCACATTATGAAATCAAACCTCCTTAATCCTAATCAACTTTTCCCTGATTTCAAGCC  
CATTGGGTGCGAATGCGGCCAAAATCTACACCTGCACAATCAACGGAGAAACCGTTTACA  
CCACCAAGCCGTCCAAAAGCTGCCACTCAACCGATTGCCCCCAATCGGCAACTACAGCA  
15 GCGAACGTATATCCCGCCCCAAACGCCCGAACCAGGTATCATCACCGTCAAACGGCGGAC  
AGGTTGTCAAATATAAAGCCCCGGTCAAACAGTATCCAAGCCGGCAAAATCCAATACGC  
CGCCGCCGCAACAAGCACCCCTCAAACAACAGCAGACGCTCCATTCTCGAAACAGAATTGA  
GCAACGAACGCAAAGCATTGGTTGAAGCCAAAAAATGTTATCACAAGCACGTCTGGCAA  
AGGGCGGCAACATCAACCATCAAGAAATAAATGCATTACAAAGCAATGTATTGGACAGGC  
20 AGCAAAATATTCAAGCCCTGCAAGGGAACCTGGGGCGTATGTAAGCCGTGTTTTCAAAAT  
CGACCGTTCCAAGGATTTGACAGAAGAAATGATGAAAAAGCAGCGGCATATCCTGTGTGT  
CGGCTGCCTGTATATTATATTGAAGGTCAACGTATTTCCCAATACCGGCTGGATGGAAGC  
GTCGAAAGGGATGCAAGGCATGTCGTTCAGTACCTTCGGATACGCGGATGCTCCGGGCTA  
TACATTGAGCCGATTGGCCATACTTTAATTTTTCTACTTGGAAGACCACAGGGACACG  
25 TACAACTGTTTCCGATAGTTCGCATAATGTATATTATGTAAATTATATATTTGTGCAAA  
TAACTCCAAGGCATTAAGCTGTTGTTTGATGCTTTGCCAGTTTGGGAGAAAGTTGCCAT  
ATGCGCCATAAAACGGGCGTTGCGATGGCGTTTCGAGCAAAATGGGTCAAGTTCGTGGACGAC  
GACGTATTAAGCGGTGCGGACACCCGAACCGCATCCCTAAATGTCTTGGTGGGAATTT  
AGGGGATTTTGGGGATTTTGGCAAGTTTTCGAAAGGTCTCAAACCCGCTCGCCTTATAGCCTGTCTGT  
30 GCTGCCATTTTCAGCCTCCAAAACCCATATTTTCAAGGTGGGCATTGACTTTGCTTTGCCA  
CTTTTCCACTTCTCGGGCAAGCTCGGCCATCGGGCTGCGGTAGCGGTCTTCCAGCGTGTT  
CAAGCGGCTGATAAGCTGCTGAATACTGTTTTCCAAGCGATTTTCGATTGCGCTTTGTAA  
ATCGGCAAGCCATTTGTCTTGAACGGCAAGCTGCTTGATTTCGGCTTCGGAAAGTCGCCC  
AAATTGTTTGAATACGGCAAGGTTTCAGGGCTTCGATTGGGTTTTGACTGCGTCTTTCGC  
35 GGCTTTTTCTGCGTCACTAGTGTGTTGGGTGGTTTGTAAAACAGCCCGTTCGCTTCTTC  
TATGCCGCTTTCTTCCAATGCGGTTTTTCAGAAGTTTGGCGGAAAGTTTGCCTTTTGCATC  
CAATACGTCGTTACGCGCACCCCTCTTCGCCGCGGTGTTCTTCTATGTGGTTTTTCAATTC  
TTGGCTTAGCGGTTTCCAGCTCGCTTTGTTTTCTTCCAGCTTGGCGATGCCGTCTGAAAA  
GTAGCGGCGGGCAACCAGCTCGGGGGCGATGACTTCGCTGCGGTATTTTTTGTGATGCG  
40 CTTGGTTTTGGCTTTGCCTTTTTGTGCGTTTTCGGTTTCTCAAAGACGACGGTCAGGTT  
CGCGGCTTCATCGCTTTCTTGGTGATTTTCGGCCAGGTTTTTAACCGCCTTCCAGCCATC  
TTGGGCGATGAGATAAACATCGTCTTGCAGGGTTTCCGCCCAGTAGTCCGTCAGGATTTG  
GTAGAAATCGTATTCCTCAATCAGGCTGCCGGGTTTGAACGCGTCCAGCAGGCTTTCGCT  
CCATTTCCGGATAAGCCTGCCCGGTTGGATGGCGGCAAGGTCGTTTTGAGTGTGCCACGC  
45 GGCAAACTTTGCTAGGTGTCCGGCTTTGAAGCGGCGTAATCGGGGTGCGCCAATATATG  
GGCTTTGATTTGGCTGCTTTCGATTTTATAGTGGATTAAATTTGGGGCTGTACTAGATTA  
GCCCTAAATTCACACCAATCCCGCAGGATTTTAAAGCTGTTGAGAGTGGGAAAGATTTGC  
AATCGATTCCGTTGTATAGTGGTAAAGTGGCCATCGTGTTTCGGCAACAACCTCGTTTTTC  
ATACGGCCTAAAACCTTGCCAATAGGCTTCCAATGCGTCCATATCGTGCGCAGGTATGCCG  
50 CCATAAAGATAGATAGGCGGCGAGATTTTGCAGGTCTTCGACTTCTCCGCTGTGATATA  
GCGAGGCAGATTAAAGTTGTAATCTTGTGCTGCGATTTTCGCTTAAATGCACCATAACGGCT  
GTAACGAGGTTTGTGAAAGTGTGATGATTTTTGTGAATGTCTTGCTCACGCAGACGGTTT  
TTGTTGCCGTCTTTAATGAAGCCGCGCGATGCGTCAATCATAAACACGCTGCCGCGCTG  
ATAACTTGGTTTGTTCCTCTTCGGCAAATTTGGGCGGTTTGGGCGTGTTCTTTGTGATG  
55 ACGATGATGACAGGCAGGAATGCCCGTGCCGTAAAACAGGTTGGCAGGCAGCCCGATAATG  
CCTTTAATAAGGTCAAGGTTAAGCAATTCGCTGCGAATACGCGCTTCGGCATTGCCGCGA  
AACAGCACACCGTGCAGGAAGAATAATCGCACCTTTGCCGCTTGGTTTCAGGCTTTTGAGC

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AGATGCAGCAAAAAGGCGTAATCGCCGTTTTTTTCGGGCGGGATAAGGCGGATTGGCAAC  
GGCAAAATCGAAGGTCTTAAGCCCGTCGTTTTTCATCACGGAAAGACGAATCGGACAAGTG  
TTCCCGTGTTGATTTCCGGCGGTTTCGTTGTTGTGCAAAATCATATTCATACGG

- 5 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 60>:

**gnm\_60**

CTGAGCGCGGAAATGGCTTTTCAGACGnCATTTGCGCTCAATAATAATATCCCGCGnTCAG  
AATACACGGTTTGGATGCGCCGGTTGCTTTGTGCGGACTACCGGAATGCGATTAATCCA  
ACACGCCGCCAACACGCAAAATnCGGCGGCTTCCACCCATTGCGGATCGAGGTTTCAGGTC  
10 GGCGGTGCTGTGCAAGGAAACGCGTGTGCCGAAACATTCTGCCAAATCCGCCATTAAAAC  
AGGATTGCGGATGCCGCCGTGCGAAATGTACATTTGACGGGCATCTGCCGCTGCGTGTGA  
GACGGCGTCGCAACCGGTTTGC GCGGTAAAACGGGAAAGCGTCCGCAATACGTCGTATCG  
GTTTTTCGCCGCCGTCAAGGTAGGTTTCGAGCCAAATTTATGGCAACAGTTCGCGCCCCGT  
GCTTTTAGGGTGGCGTTGTGCGAAATACGGGTGGGCGAGCAGCCTGTGAGCAGTTGCGG  
15 CAATATGTTGCCTTGTGCCGACTTTGCACCGTTTTTGTGTAAGGAAGCTGC

- The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 61>:

**gnm\_61**

CCCGTATCGGATGATTTTTGGGGGAATGGTTGCGCTCATGTTTTTTGATAACGGGAAACC  
20 CGTTTTTCTCTGTAGAAAGGTAAGCGTTTACTTTAAGTAATTGACTGTTGCGGGTCAAGT  
CTAATTTTAAAAAATAATCCGGTTTTTCTTACAACTGCCCCATAACGCTTACTGTACC  
TTAATCTGATGGTTTTTCGATAATAATTATCATTACAATGCAATGCCGGTTCGTTTGCTTG  
TGAACATTCAAGATGCCGACTCTGACGGCATTGACAGCATCTGAAAACAATAACGGCA  
CAAGGATGGGGTACAATCGCCCTATGGAACAAAAACACCCTATCCGCCCGCGCACCATCCC  
25 CTGGCTGCCGCTTCTGCTGGCAATTGCCATTTTTATGCAGATGTTGGATGCGACCATTT  
TAAATACGCACTGCCTGAAATTGCCGCCGACCTGAATGAGTCGCCTCTGGATATGCAAC  
TGGCAGTTATTTCTACACGCTGACGGTTGCCCTGCTGATTCCCTTTGAGCGGTTATTTGG  
CGGACAGGTTCGGAACGAAAAAGTCTTTTTTCGGTTGATTGCCGTTTTTATGCTCGGAT  
CGGCATTGTGCGCCGCATCGGGTTGCTGTTTGAATTGACGCTTTCCCGTGTGCTTCAGG  
30 GCATCGGCGGTTTCGATGCTGGTTCCGATACCGCGTCTGACCATCTTGCGTGTGTACGACA  
AGTCCAAGCTGCTCAATGCCATCAATTATGCGGTTATGCCCGCATTAAATCGGGCCGGTTT  
TAGGGCCTTTTGGCGGGCGGTTATTTGGTCAATACGCTTCGTGGCACTGGATTTTCCTGC  
TCAACCTGCCCATCGGTCTGCTGGGTTTCATATTGGGACGCAACATCATGCCCGATATTA  
AAGGCAGTAATATCTCTTTAGACTTCAAAGGTTATCTGATTTTTTCTGCCGCCGCGTGCC  
35 TCTTGTTACTTTTCGGCAGAAAGCCTGTGCGACGCGCTGCCTCCGTATTTTGCATGTTGC  
CGCTGTGCGGCGGACTGCTGTTGACAGCCGTTATTTCCGACATATGAAAACCGCGTCCA  
AACCGATTTATTCGCCCGACCTGTTTCTGATACGCACTTTCCGCTGCGGACTGGCGGGCA  
ATCTGTTTCAGCCGCTCTCGGCATCAGCTCGATTCCCTTTCTGATGCCCCCTGATGTTTCAAA  
TCGCTTTTCGGCTTCGGCGCAAGCCTGTGCGGTTGGCTGGTTCGACCCGTCGCCCTGTCTT  
40 CGCTGCTGGTCAAACCGCTGATTGCACCGCTCATGAAACGTTTCGGCTACCGCACGGTAC  
TGCTTTTGAACACCAAGCTGCTTGCCGCCCTTCATCATGCTGCTCGCCCTGCCTGACGGAA  
ACTCGCCGCTGTGGATTTGGGTTTTCTCTGCTGGCGATCGGCGCGTGCAACTCCCTAC  
AGTTTTCTGCCATGAACACACTGACCCTCGCCGATTTCGCGCCGCAACAAACAGGCAGCG  
GCAACAGCCTGATGGCGGTCAACCAACAGCTTGCCATCAGCATGGGCATTGTTGCCGGCG  
45 CATTAACTCTTAAAACTGGACATTTCTGATACCGGCTTCTTCAGGTCTGCATTCCGCTT  
TCCGTATGACCCTGCTCAGCATCGGCGGCATCACCTTGCATCATCGCTGTTTTTCAAAC  
GGCTGCACGTTTCAGACGGCACCAACCTGACACGGAACACACCGTCTGAAGCGGTCCAC  
ACGCAAAACTTTTACCCGTTTCAACGTTTGGATTATGATACCGCACTTCCATGCGCGCCA  
ACCCCAAAACACAGCAATGCCGTCTGAAACCATATCCCTGATGAAAACACGCAGCCTAA  
50 TTTCCCTTTTATGCCTCCTTCTCTGTTTCATGTTCTTCATGGTTGCCCCACTGGAAGAAC

GGACGGAAAGCCGTCATTTCAATACTTCCAAACCCGTCGCGCTGGACAACATCCTGCAAA  
TCCGGCACACCCCTCATACCAACGGGCTATCCGATATCTATCTGTTGAACGACCCCCACG  
AAGCCTTTGCCGCCCGCGCCGCTTATCGAATCTGCCGAACACAGCCTCGATTGCAAT  
ACTACATCTGGCGCAACGACATTTCCGGCAGGCTGCTGTTCAACCTCGTGACCTTGCCG  
5 CAGAACGCGGTGTGCGCGTACGCCTGCTGTTGGACGACAACAACACGCGCGGATTGGACG  
ACCTCCTGCTGCGCCTCGACAGCCATCCCAATATCGAAGTGCGCCTGTTCAACCCCTTCG  
TCTTACGAAAATGGCGCGCACTCGGCTACCTGACCGACTTCCCCCGCTCAACCGCCGCA  
TGCACAACAAATCCTTTACCGCCGACAACCGCGCCACCATACTCGGCGGACGCAATATCG  
10 GCGACGAATACTTCAAAGTCGGTGAGGACACCGTTTTCGCCGATTGAGACATCCTCGCCA  
CCGGCAGCGTCGTCGGCGAAGTATCGCACGACTTCGACCGCTACTGGGCAAGCCATTCCG  
CCCACAACGCCACGCGCATCATCCGACGCGGACATCGGCAAGGGTCTTCAAGCACTCG  
GATACAACGACGAAACGTCCAGACACGCGCTCCTGCGCTACCGCGAAACCGTCGAACAGT  
CGCCCCCTTACCAAAAAATACAGACAGGATGCATCGACTGGCAGAGCGTCCGAACCCGCC  
TCATCAGCGACGACCCCTGCAAAAGGACTCGACCGCGACCGCCGCAACCGCCGATTGCCG  
15 GGCGGTGCAAGACGCGCTCAAACAGCCCGAAAAAGCGTCTATCTGGTTTACCCTATT  
TCGTTCCCAACAAATCCGGCACAGACGCACTGGCAAACTGGTGCAGGACGGCATAGACG  
TTACCGTCTGACCAACTCGCTGCAGGCGACCGACGTTCGCCCGCTCCATTCCGGCTATG  
TCAAATACCGAAAAACCGCTGCTCAAAGCCGGCATCAAATCTACGAGCTGCAACCCAACC  
ATGCCGTCCCCGCCACAAAAGACAAAGGCTGACCGGACGCTCCGTAACAGCCCTGCACG  
20 CCAAAACCTTCATTGTGGACGGCAAACGCATCTTCATCGGTTTCGTTCAACCTCGACCCCC  
GTTCCGCGCGTCTCAACACCGAAATGGGCGTTGTTATCGAAAGCCCCAAAATCGCAGAAC  
AGATGGAGCGCACCCCTTGCCGATACCAACCCGCTACGCCTACCGCGTTACCCTCGACA  
GGCACAACCGCCTGCAATGGCAGATCCCGCCACCCGAAAAACCTACCCGAACGAACCCG  
AAGCCAAACTTTGGAAACGCATCGCCGCAAAAATCCTATCCCTGCTGCCCATAGAAGGTT  
25 TATTATAGAAATATAGCGGATTAACAAAAACAGTACGACGTTGCCTCGCCTTAGCTCAA  
AGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTTCGTACTGTTTGTACT  
GTCTGCGGCTTCGTCGCCCTTGCTGATTTTTGTTAATCCACTATACCGTCTGAAACACC  
TTCAGACGGATATCCGAACCCGCAAGGAAAAACCATGTTTCCCCCGACAAAACCCCTTT  
TCCTCTGTCTCAGCGCACTGCTCCTCGCCTCATGCGGCACGACCTCCGGCAACACCGCC  
30 AACCGAAACCCAAACAGACAGTCCGGCAAATCCAAGCCGTCCGCATCAGCCACATCGACC  
GCACACAAGGCTCGCAGGAATCATGCTCCACAGCCTCGGACTCATCGGCACGCCCTACA  
AATGGGGCGGCGAGCAGCACCGCAACCGGCTTCGATTGCAGCGGCATGATTCAATTCGTTT  
ACAAAAACGCCCTCAACGTCAAGCTGCCGCGCACCGCCCGGACATGGCGGCGGCAAGCC  
GCAAAATCCCCGACAGCCGCTCAAGGCCGGCGACCTCGTATTCTTCAACACCGGCGGGCG  
35 CACACCGCTACTCACACGTCGGACTCTACATCGGCAACGGCGAATTCATCCATGCCCCCA  
GCAGCGGCAAAACCATCAAACCGAAAACTCTCCACACCGTTTTACGCCAAAAACTACC  
TCGGCGCACATACTTTTTTACAGAATAGCGCGCCGCGCGCGCGCGCGGGAATCGCGGC  
AAAATGCCGCCTTATTCGCTGTTTCGGTCAGCGATGAGAACACGTCGAAATAAGTCGGG  
AAGGTTTTGTGGGTGCATTTCCGATCGTTGATGACGACGGGTACGCCAACAGCGAAACC  
40 AGCGAGAAACACATCGCCATGCGGTGGTCTGTCGTACGTGTGATGACGGCGTCGGGTGTC  
AGCGTTTTCGGGCGGGGTGATGTGAATTGCTTCGGCTTCTTCGACGACTTTTGCCCCGAGT  
TTGCGCAACTCGTTTGCCATTGCGGCGATGCGGTTCGTTTCTTTGACGCGCCACGAACCG  
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GCATCGGGGATATGGTTCGCATCCAAATCAAAGGATTGGACGGCACGTTCCCTTCGGGCGT  
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25 ACTTTGCCGAGATTTTGGCGCAGGTTGGGCGGTGTGCGAAATGCTGACCAGCGACCCGAC  
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40 GGTACGCAATTTCATTAGCTTGGGAAATGCCGTCCTGATTGAGATCCTGCCATACACGAG  
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10 ATTATTTTTTACTTGAATTGTTGACAAAACCTCTGTACCAATTGCTCTACTTGTGGTGT  
AAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 62>:

**gnm\_62**

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20 CTTCTCTTCTCTTCTCTTCTCTTCCGCAGCGCAGGCGGCAAGTGAAGACGGCAGCCGCG  
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25 AGAGATAAACAACAACCTACAAAGAAACCCAAACAAACATCAGGGAAACGGCAGCTTCCA  
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35 CGGTTTCTTTAGATTTTACGTCTTAGATTCCCACTTCCGTGGGAATGACGGTTCAGTTGC  
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 15 CCGACATAGCCGCTACC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 63>:

**gnm\_63**

CCGTCTTTTGTGCTACCCCTTGCCCGAATCATCCGATGTCTAAAAATTCTGCCTGATGGCA  
 20 GCCCTACAAACCCGAAGGAGTAGAAATGAAACTGTCCGAACGTTCACCCCGACGAATT  
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 GTCTGCGTTGCTGCTTCCGTAGTGGCATCGACATCGCCGAACGAGCCGCTGCCCGCCAGC  
 35 TTAATCAGGAAATAAAGGACTGCAATAAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 64>:

#### gnm\_64

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 40 TAAATCCGCCTGCACATAATACGGGCTGCGGCTGCCGTCTTCACTTGCCGCCTGCGCTGC  
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-531-

CGTAACCACCGGAAAAATCCGCGCCGTATTCCCTGCCCGTTTCAGGATTAATCGACAAAGG  
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5 GTTTTTTTTTCAGCATTCAGCTCGCCGTAGGTTTCAATCATCAGATCGAAACGCGGCAAAGT  
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GAGCGGATTAACCAGCCTTCATTGGCGCTGCTATCGAAAAAATTGACGGTTTCGGTA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 65>:

25 **gnm\_65**

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-541-

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 45 ATCGTTCTTTGAGCTAAGGCGAGGCAACGCC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 66>:

# **gnm\_66**

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 45 TTATCCGGCAAAAGGGAAACCTTGAGGCTGCCAGCCCAATAAAAAAAGCCGCAAAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 67>:

#### gnm\_67

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5 GTCGGCATTTCGGGCGTATCGCCGCCGATTGTTCCGGAATGGCTGTTAACCGCCTTGCC  
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10 CTGCTTTCGCAATGGCGGGCGGAGGCGGTTTCAGGTGTGCCGTTGACGGTGGAAGTGGCG  
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15 AGGGTTTTGCTGCATGGCGGAAGCGGTTGGGGGATTGCGGTTTGGCGCAGCCGCATCAGC  
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 35 TAGGTCATCACATTGGAAGCCGTACCGCCCGGCGAGCAGCCGACCAAAATCACGCCGACC  
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 40 GCCCAGAGGGAAAATGTTTTCTCGATAAAGCTGCTGATTTTACTGAGGATATTCATAAA  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 68>:

#### GNMBA22F gnm\_68

45 ATGACGnCATAGGGnTTTCCGTTTTCCCGATAAATTACCACAACCCAAAATCCCGTCATT  
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 50 TTCTTTAGATTCTACGTCTTAGATTCCCGCCTACGCGGGAATGACGATGGAAAGATTGTT  
 GTTGCTTCGGATAAATTTCTGCAGTTTTAAATAACnGATTCCCGCCTGCTCGGGAATGA  
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 CGACGGCGGGGAGATCCAGTCTTTAAACTCCAGCCATTCCCGATAAATTCCTGTTACTTT  
 TCGTTTCTAGATTCCCGATTTTCGnGGGAATGGATGGATn

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 69>:

**gnm\_69**

```
5 CATGGTTTGGATATCCATGCTGCTCCCTATGTACATAATAAAAAATGGCCCCGTGGCCA
TTTTTCGTCAAAGTTGAAAAATCGGCGTGATTATAACCGCTTTTGC GGAGAAATGAAAGT
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10 GGACAGGTATTTTCCATCCTTGACAAAAGCCTGCTGCAAGCCTAAAAATCGGGCGGGTAT
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50 CCTTCTCTACTGTATCCAGGACGGAAAAATCATCAGGCCGGAAGGGTGGGCGAAAA  
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55 TGACGTGTTTTAAATCAGGCTTTCAAACAACCTTTGAAAGGCAGAACAATGAACAAAC  
CGTTTATCACGCAgCGCAGTTGGCACTTTATAAATATCAGCCGTCAAGCAAGTATTATG  
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TTATAATTCATGAAGAAATCCAATGTTTTTAAATAGAAGGATTTCTAATAATATTTGGA  
AAATTTATTTTTCTGATGAGTCTGTyGCGTATATAAAAAAT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 70>:

5 **gnm\_70**

CAATGCGGATTTCGACGAGGAGTTGGAGGCGCTGCCGGGCATAGGCCCGCGGAAGGCGAA  
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ATGCGGACGGTCAGGTGCGTGGCAAGGAAGATGAAGGGAAAGGAAAATGCGCCCCAAGTG  
35 GTGTGGATGCCGAAAATTTGGAAAGGGAAGTGCACAGATAGTTGCTGGCGGCGATGATG  
AGGATATGAAAAAGCACCAGCCGGAAGAGTGCCTTCTGTTGCTGTGCGGCGGTAAATGCG  
TACATAAAAAATCTTTCGAAAGGCGTTTCAGACGGCATATCGTATCGAAGGAATGCCGTCT  
GAAATATGGGAAGGATGGTTTTATTGTGCGTCTGTCTCAAACAAGCGTTTGCGTGCCAAATG  
TTTCGAACTCGGTGCCTGCTTTCCGTAGTTGGCAACGGATGAATGGCGATGCCGCCGC  
40 CCGGTGTGAACTCGCCAACTTCGATGTATTTTCGGATCCATCAGGGCAATGAGGTCTT  
TCATGATGATGTTGACGCAGTCTTCATGAAAATCGCCGTGGTTGCGGAAGCTGAAGAGGT  
AGAGTTTCAGGGATTTGCTTTCCACCATTTTGATGTGCGGAATGTAGCGGATGTAGATGG  
TGGCGAAGTCGGGCTGCCCGGTATGGGGCAGAGGCTGGTGAATCGGGACAGACGAATT  
TGACGAAATAGTCGTTGTCGGGATGTTTGTGTCGAATGCTTCGAGAATTTTCAGGCGCGT  
45 AGCCGGTCGGATATTGGGTTTTTTGATTGCCCAAAAGAGAGATGCCTTGACGCTCTTCGT  
TGTTGCGGGACATGAGGGTTTCCTTAGTTTTTTAATGTGGGAGGTTTTCGAACCACGGGC  
GGCGATTGTAATATAAGCGGCGGTATCTGTGTAGTTTTCTTCAGACGGCATGGTTTGGAC  
GGCGGCGTTTTCCGTGTATATAGTGGATTAACAAAAACCAGTACGGCGTTGCCCTCGC  
CTTAGCTCAAAGAGAACGATTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTAC  
50 TATTTGTACTGTCTGCGGCTTCGCCGCTTGTCTGCTGATTTTTGTTAATCCATTATATAAA  
CGAAATATATTTTCAGTTTTTCCCGCTGAAGCGTTGTTTTTTGAATATTGCATCTAAAAAT  
ACTGACTTGATTGCGTTATTGCGCGGATATAGAATCTGCTTCTATTGAAAGAACATTGT  
TTATATGAAATCAGGAAATTCGGAACCAATCTTATGGATACGCACACGGACGAAACAAA  
ACTTCAAAACACGCAAGCCAAACGCAACGCCGCTGACGGCATTGACGCTGCTGTTTCGC  
55 GCTTGCCGCCGACGCCGCGGGTGGCGTTTTTTTTTATGGTGGCAGCACGAAGAGGAAAC  
GGAAGACGCTTATGTTGCCGGACGCGTGGTTACAGGTTACGCCGAAAAGGGCGGTACGGT  
CGGGAAGTTTTTGCACGACGATACGGATGCCGTGAAAAAAGGCGACGTGCTGGCGGTATT

GGACGACGATAATGATGTGCTGGCTTACGAGCGGGCAAAAACGAGCTGGTTCAGGCGGT  
GCGGCAAAACCGCCGGCAAAATGCCGCCACTTCGCAGGCGGGGGCGCAGGTTGCCTTGCG  
CCGGGCGGATTTGGCACGCGCACAGGATGATTTGCGCCGCCGGTCTGCTTTGGCGGAATC  
5 GGGCGCGGTGTCGCCGAAGAGCTGGCACACGCCCGTGGCGCAGTGTCTCAGGCGCAGGC  
GGCGGTCAAAGCGGCTTTGGCGGAAGAATCTTCGGCACGTGCGGCTTTGGGCGGTGAGGT  
TTCTTTGCGCGAACAGCCGGCGGTTCAGACGGCAATCGGCAGGTTGAAAGATGCGTGGET  
GAACCTTCAGCGGACGCAAAATCCGCGCGCCGGCGGACGGTCAGGTGGCGAAGCGTTCCGT  
GCAGGTCCGGGCGCAGGTGGCGGCAGGCGCGCCGCTGATGGCGGTGGTGCCGCTGTCGGA  
10 TGTGTGGGTGGATGCTAATTTTAAAGAGACGCAGTTGCGGCATATGAAAATCGGACAGCC  
TGCCGAGCTGGTGTCCGATTTGTACGGCAACAAATGTTTTATCGCGGCAGGTTGGCAGG  
TTTTTCGGCAGGTACGGGCGAGCGGTTTTTCGCTGATTCGGGCGCAAAACGCAACGGGCAA  
CTGGATTAAAGTGGTGCAGCGCGTCCCCGTCCGTATCGTGCTGAACCGCGAAGATGTGGA  
CAGGCATCCGTTGCGTATCGGTTTGTGATGACGGTTAAAGTGGATACTTCCGCCGCGAGG  
CGCGCTGTTTTCAAAAACGCCGGGTGCGGCATTGCGGAAATGGAAAGTACCGACTGGTC  
15 GGAAGTCGATCGGACGGTCGATGAAATCCTCGGGCAATCCGCGCCCTGATGCCGCTGAA  
ACGGAGGACACAATGGATTATCCACCGCTTAAGGGTGGCGCATTTGGCGTGGGTACGCTG  
TCTTTGGGGCTTGCCGATTTTATGGAAGTTTTAGATACGACTATCGCCAATGTCGCCGTT  
CCCGTCATCGCCGCAACCTCGGTGCGGCAACCACTCAGGGGACGTGGGTGTCACATTCC  
TTTTCTGTGGCAAACGCCGTTTTCCGTGCCGCTGACGGGCTTTTTGGCAAACGCATCGGC  
20 GAGGTCAAATTTGTTTACCGCCGCCGCTGTCGGTTTTCGTCATCACATCGTGGCTGTGCGGT  
ATTGCCCCAACCTTCAGTCGCTGGTTGTTTTCCGCATCTTGCAGGGCTTTATCGCCGGG  
CCGCTGATTCCTTGTGCGAAAGCCTGTTAATGGCATCCTATCCGCCGCAAAACGGACG  
CTGGCACTGGCATTTGTGGGCAATGACCGTCGTTGTGCGCCCTGTTCTCGGGCCGATACTC  
GGCGGCTGGATTTCCGGAAACTGGCATTGGGGTTGGATTTTCTTCATTAAATATCCCTATC  
25 GGTATCATATCGGCATGGATTACATGGAACATTTGAAATATCGGGAAACGGAAACCGTT  
AAAATGCCGACCGACTATGTGCGGCTTACATTGATGGTAGTCGGTATCGGCGCGTTACAG  
ATGATGCTGGACAGGGGTAAGGAACTCGACTGGTTGCGCTCTGGAGAAATCATTACCTTG  
GGCGTAGTCGCACTGGTGTGCTTGTGCTATTTTATTGTTTGGGAATTTGGGAGAAAAATAT  
CCGATTGTCGATTTATCGCTGTTTAAAGATCGGAATTTTACCGTCGGCGCTCATTGCCACG  
30 TCATTGGGTTTTATGGTGTATATGGGGACGCTGACCCTGCTGCCGTTAGTGTTGCAGACC  
AACCCTGGGTATACCTCCACGTGGGCGAGGCTTGCCGCCGCACCTGTCCGCATCCTGCCCT  
GTTTTCTGTCTCCGTTAATCGGCAGGTTTCGGCAATAAAATCGATATGCGCCTGTTTCGTA  
ACTGCCAGCTTCTGACCTTTGCCTTTACTTTCTATTGGCGTACGGATTTTTATGCCGAT  
ATGGATATTGGCAACGTCATCTGGCCGCGAGTTTTGGCAGGGTGTGGTGTGCGCATGTTT  
35 TTTCTGCCGCTGACCACCATCACACTGTGCGATATGAAGGGCGGGCAGATTGCCGCCGCA  
GGCAGCCTGTGAATTTCTTGGCGGTGCTGATGGGCGGTGTGCGGCTATCCGTCGTCAGC  
ACCCTGTGGGAACGGCGCGAAGCGTTGCACCACACACGCTTTGCCGAACACATCACGCC  
TATTCGCCAACATTGCACGAAACGGCCGCTCATTTGTCCCAGCACGGCGTTTTCCGACATT  
CAAACCTAGGCATCATCAACAATACCATTACCCAGCAGGGTTTTATTATCGGCTCGAAC  
40 GAAATCTTTATGGCGGGCAGCTTGTTATTCATTATCATGATACCCGTGATATGGCTGGCA  
AAACCGCCGTTCCACAACGGCGGGCGGCGGTGGACATTGAGGGATTTGAAAACCTTGAAATG  
CCGCTGTGAAAATACTGGAATATGTTTCGGACGGCATTTTGAATGCAGCAGTTCCCGAAAT  
CCGCTATAATCGCGCCCCATCTGTTTCGCACCTGCAAACGTTCCACAGATGCGACAATCG  
GAAGGATTATCCGCGCAAAACAGCCGTTTTTCGTTTAAACACTTGAACAACTGTTTT  
45 TTCGTGGTATAAATCGCGTTTTTACTATTTTAGAAGTTTGGGAGCTGATTATGGCACGAGT  
TTGCAAAGTGACCGGCAACGCCCGATGTCCGGCAACAACGTATCGCACGCCAACAACAA  
AACCAAACGCCGTTTTTTGCCCAACTTGCAATCACGTCGTTTTTGGGTAGAAAGTGAAAA  
CCGCTGGGTTCGCCTGCGCGTTTTCCAACGCTGCACTGCGTACCATCGACAAAGTAGGCAT  
TGATGTCGATTGCTGATTTGCTGCTGCGCGGCAAGCTTAATTTAAACACTATTTAAT  
50 TAAGGATTACTGCAATGCGCGATAAAATCAAACGGAATCCAGTGCAGTACTGGTCACT  
TCTACACCACTACCAAAAACAACGCACTATGCCCGGCAAAATGGAAATCAAAAAATTTG  
ACCCAGTTGCCCGCAACACGTAGTGATATAAGAACTAACTGAAATAATTTAGTTTG  
AAAGCAAAGCCTCCGACTGCTCGGAGGCTTTGTTATTTTTATCGTGTTTCTTTCCGCTT  
GAAACATCTGCCGATGCGAATCTGCTGCAAACCGTCTGCCAAGGATATGAAAACCGCAA  
55 AACGGTTCATAACACAAAAATGCCGCTGGAACGTTTCAGACGGCATTTCGGCAGTTTTTC  
AACCGGTGAGTTGTTTGGTGATCAGTTTCTTCAGCGGTGGGAAATGTTGCTGGCACGCA  
ATACCAAGCCGCGCAACAGTTTTGCCGGTGGGTCTCATTGGTAAACAGTTTCAGCATCA

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TATTGGTTCCGTGATAAAGCGGATGGGCGTGCAGCATATGTTTGCTGCTGTATTTTCCA  
ATAATGAAGATGCACCGATGTCTTGACCGCGCTGTTGCGCTTCGAGTATCAGTTTGGCCA  
AAATATCTGCGCTGGAAAGCCCCAAGTTGAAACCGTGTGCTGTAACGGGGTGCATACCGA  
5 CGGCGGCATCGCCAATCAGCGCGCTGCGTTTGCCGTAGAAACGTTTGGCAATCATGCCGA  
CAAGGGGGTAATGGTGGATGCTGCTGACCAATTCCATATCGCCGAGCCTGCCCTTGAGCT  
GTTCTTTTACGCTTGCCGCCAATTCTTCGGGCGAAAGGTTTTGAACGCTGTTGATTTTAT  
CGGTATCGACGGTAATGACGGTATTGGTCAGGTGCTCTTCCAGCGGCAGCAGTGCGATGG  
TGCGTCCGTAATGGAAGCATTCTGAAGCGGTATGTTGGTTGGAAGGGTATGTTTCATAC  
GGCAGACGAACATGGTTCGGCTGTAATCGTGCATATCGGAGGAGATACCGAGTTGTCGAC  
10 GGGTTTTCGAGAAAGCGGCTGTCTGCCGCCAAAAGCAGGCGTGCAGTCAGTATTTTCCCGT  
TTTCCAAAATGACTTGTGCTTCGTTGTGATGTTTGAAGTCTTTGACAAACCGTATCGG  
TCAGAATGCTGACATTGTGCGAGTTGTGATACGACTTCATAGGCGGCGCGCGGATATTGT  
GGTTGGAATCAGATAGCCCAAACAGTCGGCAGGTTCCGCCGCGCGCTTCAGTCGGTTGGG  
GAAAGTGGAGCTGGTAGTCGGAACGTCCGTTTCAGCACTTTGGCATCGCGCAAAGGGTAGA  
15 TTTTCGTTTTTCGGGAATTTTGTCCACATACCCCAAACGCTGCATGATTTTCGCGGGAATAA  
GGGTGAGGCGGATTTTCGCGTCCGTATATGGAGGATTTTGAGAACAGTCAGTGGGCTGC  
GTTTCGATCAGGGTAACTTTCAAACCGCTGCCGCAAGTTTCGGCTGCAAACTTAAACCCG  
CCGGGCTGCGCCGACGACGAGGATGTCGCTGTGTAACCTATAAAATATCCTTTGCATA  
GACGGATGCCGATGATTTTCAGATGGTATTTG

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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 71>:

**gnm\_71**

CCGGTTCGAGTAGTCAGTTAATAGTTTCTCCTCTATTTCTCCTTTGTAGACTTGGCACAC  
ATTCAACTGGATGTGTGCATTTTTTTATCTGAAGCAACAAGCCTCTGTGCGTGATGTTGT  
25 TATGTTTTCATTTAGGTGTCAAACCGCATATCCGGTCTGAAATATTCAATCCAAATCCAAA  
ACCGGATTTTCTTTGACCTCCTCCATCACAACTAATACTCTACTCTCCGAAGCGGCAGGC  
AGTTGCAATAGGATATTGCCTAGCATATCCCGATAGGCAGACATATCGGGCAAACGTACT  
TTAATCAGATAGTCTGATTCGCCCCGACACCAAGTGGCATTCCATAATTTGCGGAATTTTC  
AGCACTTCTTTTTTGAATCTTTCGAAAATATTGCCGATTTGGATTGCAGCTTCAGCTCG  
30 ACAAAAACCAATAAAGGTTTGCCCAACAGATGGGGATTGAGATGGGCGTGATAACCGGAA  
ATATAATGTTCCCGCTCCAAACGGCGCACCCCTCTCTGTAACGGGCGTGGTGGACAAGCCT  
ACCTTCTCGGCAAGCTCCGTCATCGGGATGCGGGCATTCTGTTGAAGGATCTTAAGGATG  
CGGAAATCGAATTTTATCTAGTTCTTTTCAATTTAGATTGCCTTGATTTATTATTGATTTTA  
35 ACAAATAGAGTATATAGTGGATTAACAAAACAGTACGGCGTTGCCTCGCCTTGCCGTA  
CTATTTGTACTGTCTGCGGCTTCGTGCGCTTGCTGCTGATTTTTGTAAATCCACTATATAT  
TTGAGAAAGCGATTATATCAGGAAAAGCAAACCGCCTTCTACCTGAAAAGTCTGCTGCTTC  
GGCTTGAAGACACAAGGTTCTTTAATATTTTAAAAGCCTTGCCGTTGGATTATAATCCCC  
CAACCGATTCTTAATTTTGTCTAATAAACACTTGCTTGGTAAGGAATGAATTTATGCGCC  
40 CTTTGAACGTGCAGATCAGGTTGGGCAACCTTAGGCACAATTATCGGATTTTGAAGGAAA  
TGCACGGAGGCAAACCTGTTGGCGGTAGTGAAGGCCGACGCATACGGACACGGTGGCGTCA  
GATGTGCTTTCGCGCTGGCAGACTTGGCAGACGGCTTTGCCGTGGCGACAATCGATGAAG  
GAATCAGGCTGCGGGAGAGCGGCATTACCCATCCGATTGTCCCTTTTGAAGGCGTATTTG  
AAGCATCGGAATACGAAGCGGTGCAACAATACTCGCTTTGGCCGCGCAGTCGGAACCAAT  
GGCAGCTTGAGGCTTTGCTGATCCGCCATTGGAAAAAACCGTCAAAGTCTGGTTGAAAA  
45 TGGATTCCGGGATGCACCGTACCGGTTTTTCCCTCATGATTACGCTTCGGCATATGCGG  
CATTGAAGCAGTCGGAATATGTGGACAGTATTGTCAAATCTCGCATTTCTCCTGTGCGG  
ACGAACCCGAAAGCGGTATGACGGAAATACAGATGGAAGCATTTCGATTGGGTACGGAAG  
GGCTGGAAGGCGAAGAAAGCCTTGCCAACTCCGCCGCTATTTTGAATGTTCCCGAAGCAC  
GCAGGGACTGGGGGCGCGCCGCTTCGGCGTTATACGGCATTTCCCCGTTTCGGAGGAGGCG  
50 ATGACAGGCTGAAGCCCGTGATGAGGCTTTCAACCCGATTTTTCGGCGAACGCGTTTTAC  
AGCCGCACTCCCTATCGGTTATGGCGCAACATTTTATACAGCAAATCTACGCGCGTTCG  
GCCTGATTGCCTGCGGTTATGCGGACGGTTATCCGCGCCGCGCCCCAAGCAATCCCCCG  
TCGCTGTCGACGGCAAATTGACCCGGGTATCGGCAGGGTCTCTATGGATATGATGACCA

TCGAGCTGGATGCTTCGCAAGAAGGTTTGGGACACGAGGTGGAACGTGTGGGGCGATACGG  
TCAACATCAATACCGTTGCCGAAGCGGCCGGAACCATCCCTTACGAATTGATGTGCAATA  
TCAAACGTGCAAAATTTCACTTATATCGAGTAATCAAGTCCAAACGAAAATGCCGTCTGAA  
5 GCCTTTTCAGACGGCATTTCCTCATCAAAACCGCAATCAGTTTTTCATCGATTGAACCGGA  
GCCGGAATTCGCGCCTCGGTTGACGAATACTTCGCACGAACCTTCTTTGACCGGCATC  
ACAGGCGCGTAGCCCAACAAGCCGCGCAACTCGACGCTGTGCGCCGACGGTTTACCGGTT  
ACCGGAATAATGCGCACGGCAGTGGTTTTGCTGTTGATCATGCCGATGGCGGCTTCGTG  
GCAATGATGCCGGAATGGTGTGCGCGGGCGTGTGCGCGGGAACGGCAATCATATCCAAG  
10 CCGACCGAACAAACGGCGGTTCATGGCTTCGAGTTGTCCAGCGTCAGCACGCTGCTTCG  
GCGGCGGCAATCATACCTTCGTCTTCGGAAACGGGGATAAACCGGCCACTCAAACCCCCG  
ACCGCGCTGGAAGCCATCATGCCGCTTTTTTTCACGGCATCGTTCAGCAATGCCAAAGCT  
GCTGTTGTGCCGTGCGTACCGCAGACGCTCAAGCCCATTCTTCAAGAATGCGTGCCACT  
GAGTCGCGGACGGCGGGGTGCGCGCCAGCGACAAGTCGAGAATACCAAACGGGATATTC  
AGCATTTTTGAGGCTTCGCGGCCGATGAGTTCGCCCACGCGGGTAATTTTGAAAGCAGTT  
15 TTCTTCACTACTTCGCAACTTCGGTCAATGTGCTGATCTGAATTTTCCAACGCGGT  
TTTACGACACCTGGGCGCGGATACGCCGACATGATAACGGCATCCGCTTCGCCCCGAACCA  
TGAAACGCGCCCGCCATAAACGGGTTGTCTCCACCGCGTTGCAGAACACGACAATTTTA  
GCGCAGCCGAAACCTTCGGGCGTGATTTCCGCGGTGCGTTTGACGGTTTCGCCCCGCGAGC  
TTGACCGCATCCATATTGATACCGGCACGCGTACTGCCGATATTGATGGAGCTGCACACA  
20 ATATCGGTAGTCTTCATCGCTTCGGGAATGGAGCGGATTAACACCTCATCCGAAGGCGAC  
ATCCCTTTTTGCACCAACGCGGAAAAACCGCCGATAAAAGACACACCGATGGCTTTGGCA  
GCTTTATCCAAAGTTTGGCGCACGCTGACGTAAGAATCAGCATGGGTGGCCGCCGCGATT  
TGGGCAATCGGCGTAACGGAAATGCGCTGATTCAATCGGTACGCGTATTGCGCAGAC  
AGATATTTTGGCTAGTGACCAAGTCTTTGCCGACTGTGGTAATTTATTGTAAATATTT  
25 TGGTTCAACACATTGATATCGCTGCTGATGCAGTCGTGCAATCAATGCCGATGGTAATG  
GTGCGGACATCAAAATTCGCTGCGCAACCATTTTGACGGTTTCTAAAATTTGCGCGGAT  
TGGATACTCATCATATTCCTCCAACCAATGCGGTGCATCGCTTGAAGATTTCTTCGT  
TTTGCATACGATATCAAGCGCGAGTTTTTGTCTCTCTTCGCAACAAATCCAAACCT  
CTTGACGCGATTTGCTGCATTTTGAAGTGTCCACCAAGATAATCATAGTAAAAAATCGT  
30 CCATCAGCTGTTGGCTGATGTTGAGAATATTGATTTGGTTTTCCGCCAAAATTTTGGA  
CATCGTACAGATGCCGACGCGGTCTTACCGATGACGGTGATGACTGAATTGTTACAG  
GCTTACTCTTGCAGATATCCGTTAAAGTCCGAAATTATACCACCGTTGGATTTTGAAGA  
AATATTGTCAACAATATATACATACAAATGCCGTCTGAAACTATTTAGACAGCATCAA  
GATTCAGGGTTCGATTAAATAACCATCCTTATCCCACTGGGTTTTCTGACCAACTTGT  
35 ATCCTGATAAACAGCTTCGCTCTTTTGAACCATCTTCATACCACTCCAAACACCCCC  
GTTGCGTTGATGGTGGCGGATAGACAGTTCGAGAGTAATCGGCCGCTTTCATCCCAAGT  
CAGAATTTTGGCAGGCTCATCGTTGACCATAACCATTTCCGTCTTGATACTGCCGTGCGC  
ATACCATTGCTTCCATACGCCGTTTGCTTATTTTGTCTAACTGGATTTGCTTTCTCT  
GCCGCCGTTACGGTAATAGCGGTATCCCGTACCCTCAAGCCATTTTTATAAGGCAT  
40 AACGGCAGATTTTTTACCGTTCGGATACAGTTGACCCACTCCCGTCCGGCTTACCCCT  
GCTGAAGCCCCCGCCATTTTTTCTGACCATTAATAATGCCACAAAATCAACATACCGTT  
TTGCAGGGTAGGCACAAAAGATTTGATTTGCGTTGAAGCAACGATATAAGGTTGAGAATA  
TTTCTTCATCGACGGATAATAAAAATCCTGCGCGTGCGCAATACCGGCCACCACACTATA  
TTGCCGTGATATAAGCGGCAGAAGACATCGTCGCGGTGAGCTTTCCGTTCTGATTAAAATA  
45 AACAGAATAGGTCTGCGCCGGCAAAGCGGCCGAAAAACCAACAGGACAGTTGAAAATAC  
AATCCGAGATAATTTTTTTCATTGCAATAGCGATATAAAAACAAGGCTGTGTTTTAGTAAT  
CTGTTGATTTCAATTATTTGCAAGGGAAAAGACAATTATTTCCGGTTAGGAATAAACCT  
ATTCTATTGAATATATTGAAGCCAAGTACGCCTATCAACACTATATTAACACACTGCCAA  
AAACAATTAACCTATAAACAATATGGTAAGGATTTCTCTGCCAAGCATCAAACCCGAGAC  
50 AACGATCGTAAAAATGCCGTCTGAAACAAATCGTCTCAGACGGCATTTCCTTTCAA  
CTCACTCTTCAACCAATAACTGCTCGCGCGTCAAGAGGAAAACAAAACCGTCGCCCCCGC  
TGGTTTCCAACCAAGTAAAAGGCAACTCCGGATACGCTGCTTCCAATACATCCCTGTTAT  
GCCCGATTTCCACCAGCAATACACCTTTGGGATTGAGAACTTTGCGCATTCAGAAGAA  
TCTGCCTGGTGGCATCAAACCCGTCCGCCCCGCTGCCCAATGCCAATTCCGGTTCTGTGCA  
55 AATACTCTTCAGGCAATAACTCAACCGATTCCGCATCCACATAAGGAGGATTGGAAACAA  
TCAATCATAAGTGCCTTCCAATCCTTCAAACAAATCCGTATGAATAAGCCGGATGCGTT  
CTTCCAAACCATATCTTCGACATTAATCCCTGCCACTTCCAAAGCATCCAAGCTCACAT

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CAACCGCATCAATTTGGGCATCAGGATAATGATGCGCCATCTGAATGGCAAGGCAACCGC  
 TTCCGGTGCAAAGATCCAAAGCATTATGCACCAACTCATCGTATTCTATCCAAGGACGAA  
 GTCCGTCACCCAACAATTCATAAATAAAAGAACGAGGTATGATTACGCGCTCATCCACAT  
 5 AGAAATCAAACCTCTCCCTGCCATGCCTGGTGTGTCAAATAAGCGGCTGGAATGTGTTCGA  
 CAGCAGCAGCTCAATAACCGCCAGCACTTCCTCTTTTTCAGCTTCCAAGAGTTTTCAT  
 CAAGATATGGGGCAAGCATATCCAAAGGCATAATCAAAGTATGCAGAATCAAATAAGCTG  
 CTTCATCATGCGCATTATCTGTTCCATGACCAAAAAAGAGCCCTGCCTCATTTAAACGGC  
 TGACTGCAAAACGTAATAATATCGCGGATAGTCGTCAATTCTTGTGCTGCCTGATTAAACA  
 10 TAATATGAACCATTTCTGCGTATAGATACTTTTAATTATAACAGAAACAACAAGCAAACCT  
 TTTCATATCGCCAAATAACCAACCAATCTACCCATACAACTACATAAATGCCCGCGCGAA  
 AACCATCGCCCGAACGGAAACGACAATGGCCGACGGTATGGGCAATCTGATTGGCTGGGA  
 AAAAACGGGGCTTGTGTGTCGGTAAGCAGTGGATAACCGCAAAAGACGACAAGGTGTCCGA  
 TGTCTGCAATGCCAACGGCGAGATGGGCGTAATCGGGCTTTACGAGCCTTTCTCACACGG  
 15 CGCATTGACGATACCGGTCATCCGAACCTGCCGATGCGAGGTTGTTTCCGTATCGGGTGG  
 CGAATTGGGGGAATTTGCCGAAAAAAGGAGCTTCGTAAAGCGGCTATGCAGTATGCGCG  
 GGATAACTTTATCGGCAAAAGCTATGTCAATAAAAAACAGCGGGCATGAACCTGAAGGTAAC  
 TTGGCAAGGTGTGAAACACGCTGCGTCAAAGGCAAAATCAGGCGGAATTATCCATCATGAC  
 AAAACTTGATGACTTATTGCGCTACGCAAAATATGAGGGTTCTTATTCCGATAGGAAAGG  
 20 TCATCCTAATATTATTGCAGCACATAAGTATCGTGCCGTTGCCAAGGTTGGGAATGAGTC  
 TTTAAATATCGGTGTGATTGTAAGGGAATTTCCAGACGACCATAAACATTACGACCATTT  
 CATCTTGAAGGATGAATAAAGCCCTTTTGCAGTGTGCTTCTGGAGCGGATAGCGTTAAGG  
 CAAGTACACTTCCAGCCTTGAAAAAGGGCTTTAAATTCAGCATGCCATTTATACAGGCAG  
 GAGTAAACCCATGACAAAGTTATACGCAGAAATCGCAAGATGGAGACGACGAGGACGACGA  
 25 CACGGTCAAGGTTTGGGGTTACGCTTCAAGCGAGGAAATCGATTTCGGACGGCGAAGTCAT  
 CGCGGCGGCAGCTATGAAGGCGGCGATTCCCGATTATATGAAGTTTGGCGCGGGGCGCGA  
 GATGCACGGCTCAAACGCTGCGGGAACGGCAATTGAAATCAACGTGGAAGATGACGGCAG  
 AACCTTTTTTCGTGGCGCATATCGTCGATCCCGTTGCCGTGACGAAGGTCAAAACAGGCGT  
 TTACAAGGGCTTTTCCATCGGCGGCAGCGTTACCGCCCACGATGAGTTGAACAAGTCGCA  
 30 AATCACGGGTTTGAAGTGACGGAAATCAGCTTGGTTGACCGACCCGCCAATCCCGATGC  
 GGTGTCTACCTGCTTTAAGGCGGACAAAGGTGCGGAAGCGGTAAACAACGATACAGAAACA  
 TAATGCTACATATTTTAGCCATTTCCCTTCCAACAAAAAAGCACCGACGGCGGCCGATG  
 CCCTTTCCCTTTACAGGTTCCCTTATTTTTATCCGCGGGCAGCACCGGTTTGGCTGGGGC  
 35 TTTTGGTGCGGGCGCGCCGACCGAAGCCTGGTCTTCAGCTTCGCCAGCACCGCAGGGCC  
 GATGCCCTTTACCTTGGTCAAATCGTCTACAGACTTGAACGCACCGTTTTCGCGACGGTA  
 TTCCGCAATGGCCTTCGCTTCGCGGGCCTATGCCCGCAGCGCCTCCAACCTCTGCTG  
 CGAAGCCGCATTGATGTTTACCGCCGCAAGGGAGAAGGCGCAGGAGAACAGCATAACAGAA  
 CAGCACGAACATTTTCTCATGGTTTTTCCCTTAAGGGTTGCAACAATAAACCGCATCT  
 40 TGCGACGATAAAACGAGTCATTCTAAAATGAATATCCCAAAGTTTCAAGCCGTTCCTCCG  
 CAAACCCGACCGGACACCGTACGGATGCCGTCCCGCCATCACCGACATTTTTTCCGGGCA  
 AAGCAAACATTTTTCCGGGCAAAAGCAAAACCCCCGAATAATCGGGGGTTTTCTGAATG  
 GGTGTTTGGCAGTGACCTACTTTCGCATGGAAGAACCACACTATCATCGGCGCTGAGTCG  
 45 TTTACGGTCCGTGTTCCGGATGGGAAGGCGTGGGACCAACTCGCTATGGCCGCCAAACTT  
 AAAGTGTACAAATCGGTAAAGCCTTAATCAATATATTCGGTAATGACTGAATCAGTCAG  
 TAAGCTTTTATCTCTTGAAGTTCTTCAAATGATAGAGTCAAGCCTCACGAGCAATTAGTA  
 TGGGTTAGCTTCACGCGTTACCGCGCTTCCACACCCACCTATCAACGTCCTGGTCTCGA  
 ACGACTCTTTAGTGCGGTTAAACCGCAAGGGAAGTCTCATCTTCAGGCGAGTTTCGCGCT  
 TAGATGCTTTCAGCGCTTATCTCTCCGAACCTTAGCTACCGGCTATGCAACTGGCGTTA  
 CAACCGGTACACCAGAGGTTTCGTCCACTCCGGTCTCTCGTACTAAGAGCAGCCCCGTCA  
 50 AACTTCCAACGCCACTGCAGATA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 72>:

**gnm\_72**

TAAATGGGACTATAAGCAGGAAGGCTTAACCAGAGCCGGTGCAGCGATTGTTACCATAAT



CGTAACCGCACTGACTTATGGATACGGCGCAACCGCAGCGGGCGGTGTAGCCGCTTCAGG  
AAGTAGTACAGCCGAGCTGCCGGAACAGCCGCCACAACGACAGCAGCAGCTACTACCGT  
TTCTACAGCGACTGCCATGCAAACCGCTGCTTTAGCCTCCTTGTATAGCCAGCAGCTGT  
5 ATCCATCATCAATAATAAAGGTGATGTCCGCCAAAGCGTTGAAAGATCTCGGCACCAGTGA  
TACGGTCAAGCAGATTGTCACTTCTGCCCTGACGGCGGGTGCATTAAATCAGATGGGCGC  
AGATATTGCCAATTGAAACAGCAAGkTAAGAACCGAACTGTTTCAGCAGTACGGGCAATCA  
AACTATTGCCAACCTTGGAGGCAGACTGGCTACCAATCTCAGTAATGCAGGTATCTCAGC  
TGGTATCAATACCGCCGTCACGGCGGCAGCCTGAAAGACAACCTTAGGCAATGCCGCATT  
10 AGGAGCATTGGTTAATAGCTTCCAAGGAGAAGCCGCCAGCAAAATCAAAACAACCTTCAG  
CGACGATTATGTTGCCAAACAGTTTCGCCCACGCTTTGGCTGGGTGTGTTAGCGGATTGGT  
ACAAGGAAAATGTAAAGACGGGGCAATTGGCGCAGCAGTTGGGGAAATCGTAGCCGACTC  
CATGCTTGGCGGCAGAAACCTGCTACACTCAGCGATGCGGAAAAGCATAAAGTTATCAG  
TTACTCGAAGATTATTGCCGGCAGCGTGGCGGCACTCAACGGCGGCGATGTGAATACTGC  
GGCGAATGCCGCTGAGGTGGCGGTAGTGAATAATGCTTTGAATTTTGACAGTACCCCTAC  
15 CAATGCGAAAAAGCATCAACCGCAGAAGCCCGACAAAACCGCACTGGAAAAAATTATCCA  
AGGTATTATGCCTGCACATGCAGCAGGTGCGATGACTAATCCGCAGGATAAGGATGCTGC  
CATTTGGATAAGCAATATCCGTAATGGCATCACAGGCCCGATTGIGATTACCAGCTATGG  
GGTTTATGCTGCAGGTTGGACAGCTCCGCTGATCGGTACAGCGGGTAAATTAGCTATCAG  
CACCTGCATGGCTAATCCTTCTGGTTGTACTGTATGGTCACTCAGGCTGCCGAAGCGGG  
20 CGCGGGAATCGCCACGGGTGCGGTAACGGTAGGCAACGCTTGGGAAGCGCTGTGGGGGC  
GTTGTGCGAAGCGAAGGCGGCTAAGCAAGCTGCTCCTAAAGAAACAATAAACAATTTGGC  
AAATTTAGCCAAAGCAGAACAGCAGATTTTATCCGTATTGCCCAACCGGATACGCAACT  
GGATGCATGGAAGACGGGATTTAACAATAGAGTAAGGAAAGGAGCAGGCTTGCTTGATGC  
AAGTAATATCCGATAACCATTAACGGAACCAATCAAACCTGTACAAGCCATAAGCTT  
25 AAAGGGATACCCGTTTACAGCGGCGTAAGCGAACAGGAGATTTTTGCGCTTTATCGGCA  
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30 AAAAAATTAAGATTCTTGATTTTCAAATCGATTTATCCTCAATTTTAACTCTTATAAAAA  
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35 TATTGCGTGTCCAATAGATTGCGCGATTGCGCAATATTGATATTTATGAGCAAGCGTA  
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40 AGCGCGCACGCGTTCATGATTTACGGCTCAATGCCGTCTGAAAAGCTCACAATTTTCA  
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45 AGCTCTACACCTTCGATAAACGCAGCTATAAAACCGGTAAGTGGTACAACTAAAACATG  
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50 AGGTGACAGACACCACCCACACCATGAAAACCGCCTGCCCTCAAGGGTAGTTGCAG  
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55 TCACAGGCTCCGTTGCGCCCGTACTCTCTGCTCCCGCGGCTACATTGTGACATCCCCA  
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GGGACTATAAGCAGGAAGGCTTAACCAGAGCCGGTGCAGCGATTATCGCGCTGGCTGTTA  
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5 TGGTTGTAGCGGCGGCAACGGCAGGCGTATCCAACAACTCGGTGCCTCTTCCCTTGCCA  
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10 CGAATAAGGGCAAATGTCAGGACGGCGCATCGGTGCGGCTGTGGGTGAGATTGTCGGGG  
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15 AAATCAACGTTAGAGATTTAAACAGACGTTGAAAGACGAAGGTTATAATTTAGCCGACA  
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TTGTCGTGCGAACAGAGCTGAATCGCGCTAATAAAGGGGAAGCGGCACAAAAGGTCAAGG  
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CATACATGAAAAATAATCCTTTTGAAAACAGCTGGCTCAAATTTAGAAAAGACAACGC  
20 TTCCGACGCAGCAAGGGCAGTCTGTCTTCTTGGTAAAAGAAACCAAGGGTTATTAAAAA  
GCCGGGTA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 73>:

**gnm\_73**

25 GATGATGACGAAATTTACAGACTGTACGCGGTCAAACCGTATTAGCCGCCAACCACAG  
GGGATACATCTTGAAAAACACAGACAAATCAAACCTGATTGCCGCCTCCGTGCGAGTTGC  
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CAGCGTTACCGTTTTCCGAAAAAGGCCTGACCGCCAAAGTCCACAAGTTGGGCGACAAAGC  
30 CGTCATTGCCGTTTTCTTCCGAACAGGCAGTCCGCGATCCCGTCTGCTGTTCCGCATCGG  
CGCAGGCGCACAGGTACGCGAATACACCGCCATCCTCGATCCTGTGCGGCTACTCGCCAA  
AACCAAATCTGCACTTTTACAGCGGCAAGACACACCGCAAAACCGCTCCGACAGCAGAGTC  
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AGCGGTCAAACCGGCATACAAACGGCAAAACCCATACCGTCCGCAAGGCGAAACGGTCAA  
35 ACAGATTGCCGCGCCATCCGCCCCGAAACACCTGACGCTCGAACAGGTTGCCGATGCGCT  
GCTGAAGGCAAACCCAAATGTTTCCGCACACGGCAGACTGCGTGCGGGCAGCGTGCTTCA  
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40 ACCCGAACCTGTACCCGCTGCAAATACTGCCGCATCGGAAACCGCTGCCGAATCCGCCCC  
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45 GGAAGAGCCTGACCTTGACGACGCGGCAGACGACGGCATAGAAATCACCTTTGCCGAAGT  
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50 CATCGAATCCACAGACAGCGTGTACGAGCCCGAGACCTTCAACCCGTACAACCTGTGCA  
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5 GTCCGCATTACTTCAACCTTCTAAAAGTACCTGCCGTTGAGGAAAATGCAGCGGAAACCGT  
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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 74>:

**gnm\_74**

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GCTGGGTTTGACGACGATGGTGTGCCCCGTACCAAAGCGGGGCCATTTTTCGGGGCAAT  
CAGGAAGAAGGGGAAGTTCCACGGCAAAATGCCGGCAATTACGCCAGCGGACGTTTGAA  
CAATAAAATATTTTCGCGCGGGCGGTTCGCTTTGGATGATTTTCGCTTCGTAGCGGCGCGC  
55 CCATTCGGCCTGATAATCGAGATAGTCGGCGGTGAACATGACTTCCACGCGTGCCAAGTC  
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GCCTTGGGCGATTTTACGCAAAATACGCGCGCGTTCGACCGCAGGCGAGCGCTCCCAAGC

CGGTTGCGCCGACGCGCGCGCGCGGTC AACGTCCGCCTTGCCGCCTTTGGG  
TTCGCGGGCGATGGCTCTTCGGTGACGGGTCAATACGTCGCGCCATTCGCGGTTGAA  
ATCGTTTTCAAAGCGTCCGTTGATGTACATGGCCAATTGTTTCATTTGGGTTCTCCAGT  
TTTGTAGTTAGATGTAGTTTTAGTTTTATCCCAAATAAATTGC

5

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 75>:

**gnm\_75**

GATCTAAGCGACACAGCCGGGGCGAACACTGAGGCAATCTACACTTCAGACGGCATTACC  
GCCAACTCTACCCAACCTCGAACAGCTCAAAAACTGTTTCCCGCCTGTTTTGACGCAGAC  
10 GGAAATTTCTTTATCGACAGATTACAAGCCGAAATCGCGCCGACAGCCGACATCGGACGC  
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CAAAACCTGCTGATTTCGTGGCGACAATCTAGAAGTGTTGAAACACTTAAAAAACGCCTAC  
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15 GTCTATCAGGACGACCGCAAATTCACACCCGCTGAACTTGCCCGCTAGCCAATATTGAT  
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20 GATGTGCCCTTTTGGTATTTTCGAGGATTATGAATGGATATTTGTATTCGCAAAATCTTGC  
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25 CCTGATGATTATGATTTCTTAAATATCAGCAATCCAGTTATGCGTTACTTTAAAGATGAC  
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30 AAGAGTAATGACCTAATCCTAGACTTCTTCGAGGCAGCGGCACAACCGCCACGCCGTG  
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20 GCTGAAGCTCGCGATCCGCAAAACGCTCCCGCCTTGACGGCAACACTGATTCCGGAGGC  
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25 GTTTTCAGGCTTTTTCGGCACGCTGGCGGGTGTTGCTGCGCGCTGCTTTTGGGTTGGAA  
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40 TCGAGCGCGTGATGGTTCATGAAAGACGGCAGCCTGCACCCCAAACAGGGCGCAAACGCCT  
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45 GCGCTGTGCGCACTCGCACCCGTTGTGCGGAACATCCGCCGCGCCTTTGATTTTGAAGGC  
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55 AAAGCGGTCAAACCGGCGCGCGCTGATTCTGCTGGGGATGAAAACAGCTCCCGTCC  
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-588-

GTGTTGGCGCAAAACACCGCCCATCTGTCTTCAGCCACCGCTTCGGCGACAACAGCGGC  
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TACCGGGCACACAAAGCCTATTGGCAGGCGGTAAAAGACGGCAATATCGAAGCCGCATAC  
5 GCGGGCATTTCGGATATCGTGGTTCTCCTCCTTGCATCGGGATGCCGATTTTACCGCGTT  
CAACCCAAAGCGGAAAACACACCATCAGAAACGGGGCGGCGATATTGACCACCACGCCGA  
AGCTGGACGCTACCGGCACGACTTCCAAGACGCCCGCAGTCTGAATCACGGGCAATGTAA  
AA

10 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 76>:

**gnm\_76**

GGCAGGCATTTTGGCGTACACCGTCATCCAAATCTACTATATGAGCCGGGACGGGCAGTC  
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20 GTAATCATCGCCGCCCGTTCTTTTGCCGTTTCAAATTCACGTCGCCGCACAGGCTGCCA  
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25 GATCAATGCCGTAAGCTTCCAAAAGCGTCATCACGCCCTTGGGCGTACACGGGCGCATCA  
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CCGGCGAAATACGTTCCAAAACCGCCTGGCTGTGAGGTGCTTCGGCAGCGGTAGCTGAA  
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30 CAGTTTTCTTGTGCGGACATAAACCGCGCTGGCAGGTCGCCTCCGACCAAAACACCG  
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35 CAAATCAAAAACTATATTTTTCATCTTGGTGTCTTGAAAATAAATGTTGACGCATCTTT  
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5 GGC GCGCCTGCCGAAAACGGGCGCGTGTGGGATTTGGGGACGGGCAGCGGCGCGGTTCG  
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10 GCAAATCGCGCTGACCGACTTTTCAGACGGCCTAAGCTGCATCCGCACCTTGGCGCAAGG  
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15

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 77>:

**gnm\_77**

GAATCAAAAATTAACCTGGGGAGCGGAAATGGTTCCGCGTCTTACCCGTTTTTAGGAGTT  
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25 GCTGCTGACTTGGATGCGGCTGTCCGTACTATAGCAGGTTCTGCTCGCTCAATGGGCTTG  
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40 CCCCCGAAGAATACATGGGCGACGTAATGGGCGACTTGAACCGCCGTCGCGGTGTTGTAT  
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AAATGTTCCGTTACTCGACCGACCTGCGTTCTGCAACCCAAGGCCGCGTACTTACTCTA  
TGGAGTTCAAGAAATATCTGAAGCTCCTGCCACATAGCTGCTGCTGTAAGTGAAGCCC  
GTAAAGGCTAATCAGAAAAGGCCGTCTGAACTGAAATAAATTTTACAGACGGCCATTGT  
45 TCTTTAATCGATCTTTATATGTAAAGGAATTAGCTCATGGCTAAGGAAAAATTTGAACGT  
AGCAAACCGCACGTAACGTTGGCACCATCGGTCACGTTGACCATGGTAAACCACTCTG  
ACTGCTGCTTTGACTACTATTTTGTCTAAAAAATTCGGTGGCGCTGCAAAAGCTTATGAC  
CAAATCGACAACGCTCCTGAAGAAAAGCTCGTGGTATTACCATTAAATACCTCACACGTA  
GAATACGAAACTGAAACCCGTCCTACGCACACGTAGACTGCCCCGGGCACGCCGACTAC  
50 GTTAAAAACATGATTACCGGCGCCGCACAAATGGACGGTGCAATCCTGGTATGTTCCGCA  
GCCGACGGCCCTATGCCGCAAACCCGCGAACACATCCTGCTGGCCCGCAAGTAGGCGTA  
CCTTACATCATCGTGTTCATGAACAAATGCCACATGGTTCGACGATGCCGAGCTGTTGGAA  
CTGGTTGAAATGGAAATCCGCGACCTGCTGTCCAGCTACGACTTCCCCGGCGATGACTGC  
CGGATTGACAAGTTCCGCACTGAAAGCCCTTGAAGGCGATGCCGCTTACGAAGAAAAA  
55 ATCTTGAAGTGGCTGCCGCTTGGACAGCTACATCCCGACTCCGAGCGAGCCGTGGAC  
AAACCGTTCCTGCTGCCATCGAAGACGTGTTCTCCATTTCCGGCCGCGGTACAGTAGTA  
ACCGGCCGTGTAGAGCGCGGTATCATCCACGTTGGTGACGAGATTGAAATCGTCCGTCTG

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AAAGAAACCCAAAAAACCACTTGTACCGGTGTTGAAATGTTCCGCAAACCTGCTGGACGAA  
 GGTACAGCGCGGCGACAACGTAGGCGTATTGCTGCGCGGTACCAAACGTGAAGACGTGGAA  
 CGCGGTACAGGTATTGGCTAAACCGGGTACTATCACTCCTCACACCAAATTCAAAGCAGAA  
 GTATACGTACTGAGCAAAGAAGAGGGTGGTTCGTCACACTCCGTTCTTCGCCAACTACCGT  
 5 CCGCAATTCTACTTCCGTACCACCGACGTAACCGGCGCGGTACTTTGGAAGAAGGTGTG  
 GAAATGGTAATGCCGGGTGAAAACGTAACCATCACCGTAGAACTGATTGCGCCTATCGCT  
 ATGGAAGAAGSCCTGCGCTTTGCGATTTCGCGAAGGCGGCGGTACCGTGGGTGCCGGCGTG  
 GTTCTTCTGTATCGCTTAATTGAAGGATATTGATAAATGGCAAACCAAAAAATCCGTA  
 TCCGCCGTGAAAGCTTATGATTACGCCCTGATTGACCGTTCTGCACAAGAAATCGTTGAAA  
 10 CTGCAAAACGTACCGGTGTCAGTTGTAAAAGGCCCGATTCCCTTTCGCCGACCAAAATCGAGC  
 GTTTCACACATTTTTCGCTTCTCCGCACGTGAACAAAACCTCCCGTGAGCAATTGGAAATCC  
 GCACCCACTTTCGCGCTGATGGACATCGTGGATTGGACCGATAAACTACCGATGCGCTGA  
 TGAAGCTGGATTTCGCCGGCGGTGTTGATGTAGAAATCAAAGTCCAATAATTTCGGACTAT  
 AAAAAATCCCAAGCAATCAATGCTTGGGGATTTTTTATGTTATGCCGAGACCTTTGCAA  
 15 AATTCGCCCAAAATCCCTTAAATTCACCAAGACATTTAGGAGCACCTTCTTCCAGCAAA  
 CCGCCCAAGCCATGATTGCCAAACACATCGACCGGTTCCCACTATTGAAGTTGGACCGGG  
 TAATTGATTGGCAGCCGATCGAACAGTACCTGAATCGTCAAAGAACCCGTTACCTTAGAG  
 ACCACCGCGGCGTCCCGCTATCCCTGTTGTCCATGTTCAAAGCCGTCCTGCTCGGAC  
 AATGGCACAGCCTCTCCGATCCCGAAGCTCGAGCACAGCCTCATCACCCGATCGATTTC  
 20 ACCTGTTTTGCGCTTTGACGAAGTGAACATCCCCGATTACAGTCATCAACCATATTCGG  
 GTTGTGCGGAGAAAGATGCATACGCTGTGATGACCGGATACCGACCCGTTAAAAGAGTCC  
 GACCCATGCGCGTCTGAAAATTCAAAACGCTTCAGACGGCATATTGAAGATATTTCTGAT  
 ATTTCTGTTGATATTTCTTTGACTTGTGAGATATAATGCCGAGCTTGGTACATTTGTGCC  
 AAGTTTAACTTTGTCTGAAAGACAGGCCAATCGTAGCCTGTCCCTTTACTTTAAAAGGAA  
 25 AATAATCATGACTTTAGGTCTGGTTGGACGCAAAGTTGGTATGACCCGCGTGTTTCGACGA  
 ACAGGGTGTCTGTTCCGGTAACCGTTTTGGATATGTCTGCCAACCGCGTTACACAAGT  
 AAAATCCAAAGATACTGACGGCTATACTGCCGTTCAAGTTACCTTTGGTCAGAAAAAGC  
 CAATCGTGTCAACAAAGCCGAAGCCGGGCACTTTGCAAAGCAGGTGTTGAAGCCGGTCG  
 CGGTTTGATTGAGTTTGCTTTGACTGAAGAAAAACTGGCTGAATTGAAAGCTGGTGACGA  
 30 AATCACCGTTTCTATGTTTGAAGTCGGTCAACTGGTCGATGTAACCGGTACCTCTAAAGG  
 TAAAGGTTTCTCCGGCACGATTAAACGTCATAACTTCGGTGCCCACTTATTCCGCTTGC  
 AGCTTGCCGCTGAAGCGTACCAATACAGACTCGGGCATATCGAGCGGCATTACGCCCGTT  
 GCGGCGGCAAATGCAACGGGTA

35 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 78>:

### gnm\_78

TTTTChTAGCAGGCATCAAACCTGCCCGGCAGCATCGTCGGCATGGGCGTGCTGTTTGGCG  
 TTTTGCAGCGGGTTGGGTCAAACGTCCTTGGCTGCAACAGCTTACCGACGCGTGATGT  
 40 CGAACCTGACGCTGTTCTCTGTCGCCCTGCGTGGCGGTATCAGCTATTTGGATTTGA  
 TTGCCGACGATTGGTTTTCGATACTGGTTTTCCGCTCCGCCAGCACTTTGTGCGTACTGC  
 TGGTTACGGGCAAAGTCCACCGGTGGATACGGGGTATTATCCGATGAACGAAATCCTCAG  
 GCAGCCAGCGTTCTGCTTTTCTCAGCCTTGCCGTGTACGCGCTTGCGATTATCGTGCG  
 CACGCGCACGGGCAATATCTTCTGCAACCCCGTACTCGTCAGCACTATCGTGCTGATTGC  
 CTACCTGAAAAATCCTCGGTATCGATTATGCGGTGTACCACAACGCCGCGCAATTCATTGA  
 45 TTTTGGCTGAAACCCGCGCTCGTCGTGCTTGGCGTGCCGCTTACCAAACCGCGGTAA  
 AATCTTCAACCAAGTGGCTGCCGTCATCGTTTACAGCTTGGGGCAGCGTTACGGGCAT  
 TGTTACAGGGATGTATTTTGCCAAATGGCTGGGCGCGGAACGGAAGTCGTCTCTCGCT  
 CGCGTCCAAATCTGTTACCAACCCCATCGCTATTGAAATCACCCGCTCCATCGGCGGCAT  
 TCCCGCCATTACCGCGGCCACCGTCATATTGCCGGTCTGGTCGGACAGATTGCCGGTTA  
 50 CAAAATGCTGAAGAACACGGTCGTATGCCCTCGTCCGTGGGTATGTGCTCGGCACGGC  
 TTCGCACGCGATGGGGATTGCCGCTCGCTCGAACGCAGCCGCGTATGGCGGCATACGC  
 GGGGCTGGGGCTGACGTTCAACGGCTACTGACCGCGCTGATTGCGCCGCTGCTCATCCC  
 CGTTTTGGGATTTGAACCGTTTTAGACGGCATTTAGCCCATGCTGTCTGAACGCCGA

CACACTCGCAAGGAGAACC GTTATGGCTGTCAACCTGACCGAAAAAACGCGCAACAACT  
GCCCGACATCGACGGCATTGCCCTCTACACCGCCCAAGCAGGCGTGAAAGAAGCCCGGGCA  
TACCGACCTGACACTGATTGCCGTAGCCGCCGGCAGCACCGTCGGTGCAGTCTTCACGAC  
CAACCGTTTCTGTGCCGCGCCCGTCCACATCGCCAAATCGCACCTTTTCGACGAAGACGG  
5 CGTGCGCGCCCTCGTCATCAACACGGGCAACGCCAACGCGGGTACGGGCGCACAGGGCAG  
AATCGATGCTTTGGCAGTGTGTGCCGCCGCCGCCGGCAAATCGGCTGCAAACCGAACCA  
GGTGCTGCCCTTCTCCACCGGCGTGATTCTCGAACCGCTGCCCGCAGACAAAATCATCGC  
CGCCCTGCCCAAATGCAGCCTGCCTTCTGGAACGAAGCGGCACGCGCCATCATGACCAC  
CGACACCGTGCCCAAAGCCGCTCGCGCGAAGGCAAGGTGCGCGACAAACACACCGTCCG  
10 CGCCACGGGCATCGCCAAAGGCTCGGGCATGATTTCATCCCAATATGGCGACCATGCTCGG  
TTTCATCGCCACCGATGCCAAAGTTTCCCAACCCGTCCTCCAATGATGACGCAGGAAAT  
CGCCGACGAAACCTTCAACACCATCACCGTTGACGGCGACACCAGCACCACGACAGCTT  
CGTCATCATCGCCACCGGCAAAAAACAGCCAAAGCGAAATCGACAACATCGCCGACCCGCG  
TTACGCCCCAACTCAAAGAATTGTTGTGCAGCCTCGCGCTCGAACTCGCCCAAGCCATCGT  
15 CCGCGACGGCGAAGGTGCGACCAAGTTTCATCACCGTCCGCGTCGAAAACGCCAAACCCG  
CGACGAAGCCCGCCAAGCCGCTACGCCGTGGCAGCTTCGCCGCTGGTCAAAACCGCCTT  
TTTCGCTCCGACCCCAACCTCGGCAGGCTGCTCGCCGCCATCGGTTATGCCGCGCTTGC  
CGACCTCGATACCGACCTCGTGAAATGTATCTCGACGATATTTTGGTTGCCGAACACGG  
CGGACGCGCCGCAAGCTACACCGAAGCACAAGGGCAGGCGGTGATGTCGAAGGCCGAAAT  
20 CACCGTCCGCATCAAGCTGCATCGCGGACAAGCCGCCGCCACCGTCTATACCTGCGACCT  
GTCGCACGGATAGTTTCCATCAACGCCGATTACCGTTCTTGACCCGACACGGCTTCAGA  
CGGCATACATAAAATGCCGTCTGAACCGCCGGACAACATACCATGACCTCCACATTCGCC  
CGCCGCTCGCCCGCAAAATCCGCCAAACCCGCCGCTGTGCGGCAAAAGCATCGCCTTT  
CTGTTCCCTTTTGGCAGGTTGCGCACTCGTCGCCCTGACCGCGCTGTTTTTGGCCATCTT  
25 GCCGATTTTGGCGTGGAACGAACGCCAAACTGGTTCAACAATACCCGTGGTTGCGGTGG  
GTCGCGCTTCCTTTGGGTTTACCGCTTATTGCGTGGCTCACACGCAAATTCGCCCCCTTC  
ACCGCCGGCAGCGGCATCCCGAGGTCATCGCCTCACTGTGCTGCCCTACGGCGCACAG  
AAAACGCGGCTGATCCGCTCGGGCAGACGCTGCTGAAGATTCCGCTAACCTTTTGGGT  
ATGCTGTTGCGCGCGTCCATCGGACGCGAAGGTCCGTCCGTGCAGGTCGGCGCGGCAGTG  
30 ATGGGCGCGTGCGGCGCGTGTTGCAAGAAACACGGCTTGGCATTCAAAGGGATGCAGGAA  
AACGATTTGATGGCGGCGGGCGGGCGGGCGGTTTGGCAGCCGCGTTCAACGCGCCGCTG  
GCGGGCGTGATTTTCGCCATTGAGGAACTCGGGCGCGGCATCATGTTGCGCTGGGAGAGG  
CAAATTCTTTTGGGCGTGCTCGCCTCCGGTTTCATACAGGTGCGCATTCAGGGCAACAAC  
CCGTATTTTTCGGCTTCAACGGCGGGCGTATTGGAACATATCTTTCTGTGGGTGCGACTG  
35 TCCGGCCTGGTTTGGCGCGGGCGGGCGGGCTGTTGCGACGTTTGCTCTATCGCGGTGCG  
GCGGCGTTTGACCCGCGCAAGATACGCGGCTTCATCCGCAACCGTCCGCTGCTGCTGGCG  
GCACTGATGGGGCTGCTGCTCGCCCTGCTCGGCACGTTCTACCAAGGCAAAACCTACGGC  
ACCGGCTACCACGAAGCCGCCCAAGCCCTGCACGGCATCTACGAAGCCCCCTTCGGACTC  
GCCGCGCCAAATGGCTCGCCACCGTATTAGCTATTGGGCAGGCGTTCCGGGCGGCATT  
40 TTCACTCCCTCGCTGACCATAGGCGCGGTTTGGGCGAGCATATCGCCGCCATCGCCGAC  
ATATCGCAGGGTGAAACATCATCGTCTCATCTGCATGGCGGCATTTCTGGCGGGCGCG  
ACACAATCCCCGATTACTTCGCCCGTCTGTCATGGAAATGACGGGCGGACAAAGCCTG  
CTGTTTTGGATGCTAATTGCCTGCATTTTCGCCTCGCAGGTTTCGCGCCAGTTTTCGCCG  
CGTCCGTTCTACACGCATCGGAATGCGCTTCCGCCAGCGCTGCTTCAAGAAACCGCC  
45 GCCCAAACCGCAATGCGCCCGCAAGACCGCAACAGCAAACAGCAAACGGGAATGCCG  
TCTGAAAATTAAAACGCCCCCGATCAACGCGCGGACCGCCTTGATTTGAATACCGTTC  
CGCCGCGCTTGAAATTTAGCAACAATGCCGTCTGAACGACAGAATGCGGTTTTCAGAC  
GGCATTTCCTCATCCCGATATTGCCTAAACAAAACCGAAGCGTTTGCTATAATTCTATTT  
TTTACCGCATACGCACCAATCATGTTTCCCGATTTCTCCAAACCCCTCTCCAAAGACCGC  
50 CACTTCCTGCGTTCCGCCTTCAAAAATCCCAACAAATACGGCGGTTTGTCCAAAATCGAA  
GAAAAATACCGAAATCGCACGAAATCTTTTGAAGCGTTTGGCAGCCTTGCCAAAACCC  
GAATTCGACAACACCTTGCCCGTTACGAGAAGCTCGAAGAAATCAAAAAAGCCATTGCC  
AAGAATCAGGTAACGATTATTTGCGGCGAAACCGTTTCGGGCAAAACACGCAGTTGCC  
AAGATTGCTTGGAACTCGGGCGTGGGCGGCGAGGATTGATCGGGCATACCCAGCCGCGC  
55 CGTTTGGCGCGCGCTCCGTAGCAGACGGATTGCCGAAGAGCTGAAATCCGAAATCGGC  
AGCGCGGTGCGCTATAAAGTACGCTTACCGACCACACCTCGCGCGATGCCTGCGTCAAG  
CTGATGACCGACGGCATCTGCTGGCGGAAACGCAGACCGACCGTTATCTCGCCGCTAC

5 GACACGATTATCATCGACGAAGCGCACGAGCGCAGCCTGAACATCGACTTCCTTTTGGGC  
TATTTGAAACAACCTCCTGCCGCGCGCCCCGATTTGAAAGTCATCATCACCTCGGCAACG  
ATAGACGCAGAACGCTTCTCCCGACACTTCAACGGCGCGCCCGTTTGTAGAAGTGAGCGGA  
CGGACGTATCCCGTCGAAATCCTCTACCGACCGCTGACCGGCAAAGACGAAGACGACGCA  
10 GAAGTGGAGTTGACCGACGCGATTGTCGATGCGGCGGACGAATTAGCGCGACACGGCGAA  
GGCGATATTTTGGTATTCCTGCCGGGCGAGCGCGAAATCCGCGAAACTGCCGAAGCCCTG  
CGCAAATCCACGCTGCCCGCAACGACGAAATCCTGCCCTGTTTCGCACGCCCTGTCGCAC  
GCCGAGCAGCACAAAATCTTCCACCCCTCAGGCGCGAAACGCCGCATCGTATTGGCAACC  
AACGTCGCCGAAACCTCGCTTACCGTGCCGGGCATCAAATACGTCATCGACACCGGCCTC  
15 GCGCGTGTTAAACGCTATTCGCGACGGGCGAAAGTGAGCAGCTTCATATCGAAAAAATC  
TCCCAAGCCGCCGCCGCCAACGATCCGGCCGCTGCGGACGCGTCTCCGCAGGCGTGTTGT  
ATCCGACTGTTTTCAGAAGAAGATTTTAACAGCCGCCCGAATTTACCGACCCCGAAATC  
GTCCGCGACAACTCGCCGCGTTCATCTGCGCATGGCAGCATTGAAACTCGGCGATGTG  
GCGGCATTCCCGTTTTTAGAAATGCCCGATTACGCTATATCAATGACGTTTTCAGGTG  
20 TTGTTGGAGTTGGGGGCGGTGGAGGCCGTCTGAAACAGGCAGACATAAAAGAAAAATCCG  
CGTAGAGTGATGTAACTTACCCTTGCTTTAATAAGTAGAAAATGGTGGGTTTACGTCCC  
CCCTTGCGGCTACTAAAAAATATAAGAGTAAACAACCTTTTTGAAAGAAAAATGTATGG  
ACGAAATTCAAATACCCAAAAAGTGGAATTACAAACCAAACCTAGAAAATGAAAAGATTG  
TTTTATCGAAAGGTTCTACCACGATTATTGTTGGTGCTAATGGCACAGGGAAAAACAAGAT  
25 TAGCTGTTTATATTGAAGAACAATTAAGGAAAAAGCACACAGAATTCGGCTCATAGAG  
CATTAAAATTAACCCCTAATGTCAATAAAATACCAGAAAAGAGTGCCAAACATATCTAT  
CTTATGGTCAGAACTGGGATGGAATCGATGTATCAAATAGAAAAAATTATAGATGGGATA  
ATAACTCATATACTCATTTACTCAACGATTTTGATTGGTTATTACAATATTTATTCGCTC  
AACAAAATAATATTGCGGTAGCAAATAATCAAAGCTCAACCGTAATGAAAAAGTAACCG

25

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 79>:

**gnm\_79**

30 GCCCCTGGCTTCTTAAAGGTTGTCCGCCCAAATGCTCAATGACAAGGACTTGCCGTAAAA  
GCGGTAAGAAAACGTGTACTCATAGGAGAAACCTTATGTATTTTGAATCTATAAA  
GACGCAAAAGGCGAATACCGTTGGCGTTTGAAAGCAGCAACCATGAAATCATCGCTCAG  
GGCGAAGGCTACACCAGCAAGCAAACTGTGACGACGCGATCGATTTGCTGAAAAGCACT  
ACCGCCGCTACCCCTGTAAAGAGGTATAAAATCCGCTTTCACCCTCAGCCCGGCCCTA  
CGCGGGCTTTTTTGTGCTTCCGACTTTGCGGGAGTGATTGCCCGCCAGTCGCGCCAA  
35 GCCTGATTTTGATTTTCCAACCTCCGCCACATAGCCACCAAACCTCAGCGGCGTGTTCCAAC  
AGCGTGGCCGCTTTCGCGTCTTTCGGCGGATTCCGGCGTACCGGCGCGACCATCAATGCA  
GCAGGCGGGTTCGGCATGACTGCCTTTTCGACAACCTTAATTTCCGTAGCCGAGGGCGCG  
GTTGTAGAGCTGCAGGCCGTGAGAGCCAAAGCCGTCAATGCAACCGCCGCTTGCATTTTT  
ACGGTCTTGAGTAAGGACATTTTCGATTTCTTTTTATTTTCCGTTTTTCAGACGGCTGAC  
40 TTCCGCTGTTTTTTTCGCCAAAGCCATGCCGACAGCGTGCGCTTGACTTCATATTTTTT  
AGCTTCCGCGCGTGCCAGTTCCAGTTCGCGCGCATAGTTTTGAGCCGACAACAGCAGGGC  
TTGCGCCTTGTCGCGCTCCATCTTGTCGATGACCGCTGCTGCTTCGCAATGCCGACTT  
GTAGCCTTGATGGTGCGACACAGCCAAGCCCGTGCCGACAAGCGCGATAATGGCAATCGG  
TTGCCAGTTATTCGCCAGCAGTTTCACGAGATTCACTCTCGACCTCCTGACGCTTCACGC  
TGACAAATGAACGCGCCACCGCATAGCCGCCGACAATGCCCAAATACACCGCCCAAATTT  
45 CCGCCGACGGATCGGGCAACATCACAACCTTAAACGTCCAGCCGCGCAGGCAACGTTTG  
CCACAGTTTCGAGTGCGACACATTCCTGTGCGCCGGGTTTTTAAAAATATCCAAATAC  
GCATTGCTATTCCACACTTTTGGTTTGAGGTGCCGTTTCAGCATTTCCCGATAATTGGC  
CAGTTCGCCCTCCGCAAATCAAACGCAGCCAAGTCCGCTGTTTCGCTTGCCCTCACGGCT  
TTTGCCGACACAGCCCAATCATCTTTTCGTAAACGCAACCTGTCCCATGATTAACGA  
50 CGATTCTTGCGTTTGCGCGCCGACGTTTAGCAGCCGCCACGCTGATTTACCCAAGCGC  
AGGCTCGGATGTTGTTTCAAAGAGCCTACCCGAACAGGGCTTGCGGTGATTTGATTTCA  
GGTAACGGTGGTACGCCAAATCGTTTTTCAACTTTGCACAATGGGCAACACATAAAGCA  
ATCAAAGACTTTTTTCATACCTTCGCCGCTCCCAATTCATCGCAATCGCGTCCGCAATCG



CGCGGCAGATGCCCCATTTGGTCTTAAACAAGGCCAAATCAGTGTCTGCTGATGA  
AAAAAGGCTCAAACACAATGCCGCTGCTGCGCATAAGCCAGGCGCGAATGTTGCCCTG  
CGTTATCCGGCTTAAAGCGTCTTCCGCGCAGTTTCCAGCCGGTTTTCTTGGCAACGG  
CTTTGCCAGCACCTGACACCAGCGTTTATTTTTCGGCGTGGACAAGGCTTCGATGCCTG  
5 TCGCCGTTTTGTTCCGCCCGCATTTGGTGTGGAACCAATCGCCACATCCGAGCCGCGAA  
TCAGCTTGACCGCATCGCGCAGCGGCATATTGCCTTTGCCCGTGCCGTTCGTTTTAACGG  
TCAGGCCGTAATCGTTACGCAGGATTGAAGCCACAATGTTGCGCATATCCTGCGCCAAGT  
CCGCCTCACGGTCGCTTCCGTTGACCGCACCCGGGTTCGGTGTGTGCTGTGTCAGCGGTAA  
AGGTTACGTTTTGCCCATTCATCATCTCCAAAAATATTGATTGCATATAGTGGATTAA  
10 CAAAAATCAGGACAAGGCGACGAAGCCGACAGACAGTACAGATAGTACGGAACCGATTAC  
TTGGTGCTTACGACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACGCCGTAC  
TGGTTTTTGTAAATCCACTATAACATTTGAAAACCCCATTAACCCGTCTTTAACCCATCG  
TCCCGAACGGTAGATGTTTACCCCTGCAAACCAAAAAAAGACCGTCTGAATACAGACG  
GCCAAAGCCTGGTCACACATCACTGCCTAAAATAAGCTGCCTGCTGTGCCGACGGTCGG  
15 CTCATTTTCATTGATAATCGTATATCCCGTTTCGTGAAGAGATGCCGTATTTAGGGCATAGC  
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TAAAACCTATGTTTTCTCAACTGTATTAACGCCTTGCCGCACCGTGGGACATAACAATTCC  
TCGCCACCATATACCTGCAACAGCTCATGTGTTTTCACTTCGCCGATGGCTTCGACCAA  
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20 GCCTTGACCAGCTGTTCCGTCGCTGCCAGTCCGATGACATCCACAATGTCCAACACGGTA  
TCCGGCAATAAATGTTCAACTTTTTCGAACCCCATCATCCCCACCGCTTTTTCCGTTTT  
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TTCGACCTTATCCTTACCAAACATCCGCCGCGCCATTGCGTGTGCATAGTTCCAATGTTT  
GCCGCCGACGGTCAGCAGGGCTTCGACTTTGTCCAACATTGCCGCTGATGATGTCCGACG  
25 CAGATGCGGTTTGCCGTGTGGGTTACCTTTTGCTTTAGGCTTAAATCCGTGCGACCGCAT  
ATCAGCGACAACAGACTCAAGTTCGGAACATCCATATCCGCACACGACCGCTTGCCCGT  
CACACGCTCCAACACCGCGCATAGGTACCGTCATCCAAGCCAGCTCCTTTGAGCAAT  
CTTAATTTTCGCAATCAACGCCCGCGCATCTCAAAACCCATAAAACACAATATATAGTAT  
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30 TCGGGCAAAAATACCAAACCTCAAATCAAGCCGTTTAGATACCGTTTTCGGCGGTATCGT  
TTTTCGGCAAAAATAATCACGCATCCGGGCATTTCGATATCGTCAGCAGTTTGGCATAACATG  
CCGTAACGGCAACCTTATACGGCTTACCCTCGGACGCGCAGGCGTTGGTAGAAATCCCGAA  
TAAGCGGTTCAAACGTTGTCGCTGCCACGGTAGCCATATACAGTGCCTTACGCACCGCAG  
ACCTTCCGCCAAAGCAGCGGCTTTTGAATTTGGTTTCCCGCTCTCCCTCGGGTGTGGGG  
35 CAATGCCGACTAGACTCGCTATCCGTTTGTGCGACACCGCCCAATTTCGGCAACATCG  
CCATCAGCGTAGCCGCTGTTATCGAACCGATGCCCTTGATTGCTCTGCCACTTGGGCTT  
TGCCGTCAAAATGCGTGTGGGTGTGGTTGTCGATTGTTTGTCCAATTCTGTCATACAGCC  
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40 CCAACACTTCTTCCACTTCGGTGGGCGGGTGGTAGGGCATGTTTGCGAATCTTCTTCT  
GTGCCGTCTCTGTGCGAAGAAGGCGGGCATTGTCGATCTTTGGCGTCGTTTGGTCA  
GCGGCTGCGATTGGGCAAACTGATGCGTCTGACGCGGGTTGGCGATAATCACGGCCCTGC  
TCGGCGGATGGCTTTGGCGGCGGGGATTTCGAGACCGCCGGTACTTTCCGTACGACGAG  
GGCGACCTTGTGTTTTTAAAGGTATTGATAGTATGGGCGATACCTTTGGGGTTGTGGT  
45 TTCGGTTTTGGTTTTAGACAAAGACGAACGGCGATGACGAAGTTTCGTTTGGCGATGTC  
GATATAGTGAATTAACAAAAATCAGGACAAGGCGGCGAGCCGACAGTACAAATAGTA  
CGAAACCGATTCACTTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCG  
AACCAACGCTGTACTGGTTTTAGATTTAATTCACTATACCTGCGTAATGGTATTGGGTACT  
CATCATAAACCTGCCTTGCAATTCGGTTGTGTTGTCCGGCAACTGTCCGGTTGTGTCGATG  
50 GGTGCCCTGCCGCTCCCTGAGCTACGCAACGGTTGTGTCCTTGGGTGGGCGCGGGTGG  
CGGCTGGGCGGTTTTGTTGCTATGATACGGTGATTCCAAATATACAAGGTTGGGCTTCAGTC  
CACCGCTTCCGTGATTCGGTCAATGTTACCCATTTCCACCGTCCCCGCCGAAACCAAAA  
CCGCCGACTCCCGCGGTTCTCCAAAAATTTTGTATGACGCGGGCTGAAGCACACCCTGC  
ATCCACCTTTTACGAATCCTCCTACACCCTATACAACCTTGAAAATCCACCCTGTCA  
55 GGAATACCCGAACCGTCATCCCTACCTTCGCAAAATAGCGCAAAATACCGTCTGAAAGCC  
CTTCAGACGGCATTACCTTGTGTTATCTGCATCAATGGCGGAAATGGCGGATGCCGGTTAC  
GACCATGGCGATGCCGTGTTCTGTCGGCTGCGTCGAAACCTTCCTGATCGCGCATCGAGCC

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5 TGCCGGATGGATGATGGCTTTGATGCCCTGTTTCGGCAATCACGTCCACGCCGTCGCGGAA  
GGGGAAGAAGGCATCGGATGCGGCACACGCGCGTTGAGGTCGAGACCGGCATCTTGCGC  
TTTGCGGGCGCGATGCGGGTGCTGCCACGCGGCTCATTGCGCTGCGCCGATGCCGTA  
GGTTTGACCGCTTTGCCGAATACGATGGCGTTGGATTTGACGTATTTGGCGACGTTCCA  
10 GACGAACAGCAAATCGTTCCATTCTGCTCGGTGCGTTGGCGTTTGAGACGACTTTCAA  
ATCGGCGCGGCTGATGCGGTGGATGTCGGGCGTTTGCACCAACAGTCCGCCGCCGACGCG  
TTTGAGTTTCAAGCGGTTTGCGCCTGCCTCAAGCGGCACCTCCAATACGCGCACGTTTTT  
CTTGCGGGCGCGGATTTTCGAGGGCTTCGGCGGTGAAGTTAGGCGCCATGAGGACTTCCAT  
AACTGGTTGTCGGTAATTTGTTGACGGTTGCGCCGTCAACTTCGCGGTTGAAAGCGAT  
15 GATGCCGCGGAACGCGCTGGTGGTGTGCGGTGGCGTAGGCGAGTTGTAGGCATCCAAGGT  
ATTGGAGGCGATGGCTACGCCGACGGATTGGCGTGTTCACAATCACGCAGGCGGGCAC  
GTCGAAGGATTTGACGGCTTCCCATGCGGCATCGGCATCGGCGATGTTGTTGTAAGACAA  
TTCTTTGCCTTGCAAGTTGTTTGTATGCAGCGAGGCTGCCTGCGGCGGGTCAATATCGCG  
GTAGAACGCGGCGCGCTGATGCGGGTTTTCGCCGTAGCGCATGTCTTGCACTTTAATCCA  
20 GCTTTGATTGAACCGGCCGGGAATCCGGCGATTTTCGGGCGTGCCGCTCAAGACGTCGTC  
TGAAAGCGAGGTGAGTAATTTGAAATCATACCGTCGTATTGGGCGGTATGGCTGAATGC  
TTTGCGCGAGAGGTTGAAACGGGTTTGTGCGCTCAATGCGCCGTTGTTGGCTTCGAGTTC  
GGCAGCTATGGCCGGGAAATCGGCGGTGTCGGTAACGATGGCGACGTGTTCCAGTTTTT  
CGCGGCAGAGCGCACCATGGTTCGGGCGCGCATGTGATGTTTTCAATCGCGTCTTCCAG  
25 CGTGCAAGTTTGGTTTGGCGATGGTGGCAGCGAAGAGGTAGAGGTTGACGCACACGAGGTC  
GATATTGCCGATGCCGTGTTCTTCCATCTTGGCGACGTGTTGCTCCAAATCGCGACGACC  
GAGAATACCGCCGTGGATTTTCGGATGCAGGGTTTTACGCGGCGCTCGAGCATTTTCGGG  
AAAACCGGTATAGTCGGCAACTTCGATAACGGGAACGCCTGCATCAGCCAAGAGTTTTGC  
TGTACCGCCGGTAGAAAGAAATTTGACACCGAGTTTGTGACAGGGTTTGGGCAAATTCGAC  
30 TGCGCCTGTCTTGTGCGATAGGCTGATCAGGGCGCGTTTGATGGAAGACATTTGGATTTT  
CTTTGTTGAAGGTTTAAATCAGTATGGGATGAATTTTCAGGGCGGTATTATCCCCAGTTT  
CGCATTTTTGGCAGTAGGTTTTTGCAAATATTGTTAACAATTTTATTGTAAAGGCCGCTC  
TGAAACTTGGTTTTGACACGCGCTTTTGCTTTTGCTATTTAATCCCATTTTCTTTGCCA  
CCCATACTGCACCTGCCATGCCTGTACATAATGGCATGAGCAAGGCAACAGGGGCGTAGG  
35 TGAGCTCCAAATAAAGGCTATGGCGGTGACGGGCGATTTTAAGGGAAACACCGAGGAAAA  
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 10 TAGCCGAGATTTTCGGCAAGCTCTTGACGGTTGGGTTTGGGCGTGAGTTTGGCAAGCTGT  
 TTGTCGAGTTGGACGCGGCTTCTTCGCGCACGGTGTTCGGCGTTTCTGCGCGGATGTAG  
 GCGCGGATTTTGCCGATTGCCTTGTGGATTGACCCAGCCTTCGTAAAGCCAGTTGACG  
 GAAGGATGCCCTTCTTTGGCGGTAATGATTTCGACGCGCTGTCCGTTTTTCGAGCGGGGTG  
 GACAGCGGCACAATCTGCCCTTCGACTTTCGACCCGCGGCAACGGTCGCCGATGCTGCTG  
 15 TGCAGGGCGTAGGCGAAGTCGATGGGGTTCGCGCCCGTGGCAGGGAGAGGACTTTGCCG  
 TGCGGGGTCAAAACATAAATCGTGTGTTGAAAAGCTCGGTTTTGAAGGCGGCGCGAGG  
 TCTTCCTTGCCGCTTTCGCCCATGTTTTCGCGCCAGTCCAAGAGTTGGCGCAACCAGGCG  
 ATTTCTGTTCGTAGGCGGAATCGCCCTTGCCGCCCTCTTTGTAACGCCAGTGGGCGGCG  
 ACACCGAATTCGTTGAATTGGTGCATATCGAAGGTGCGGATTTGTACTTCCACGCCCTTG  
 20 TCTTCGGGCGCGACGATGACGGTGTGCAAACTTTTATAGCCGTTGCCCTTGGGATTGGCG  
 ATGTAGTCGTGAACTCGCCGGGAATGGGCTGCCAGAGGCTGTGGACGATACCCAGCGTG  
 GTGTAACACTCGGGACGGTATCAACCAGAATTCGCACGCGCGGATGTCAAAGAGGCCG  
 TCGAAGCTGAGTTTTTTCTTACCATTTTTTTGTAAATGGAGTAGATGTGTTTCGGGCGG  
 CCGGCGACTTCGAAATGGACATTGTATTTCTTGAGTTCACCGCGCAGGATGTTGAGGAAG  
 25 TTTTCGATGTATTCGAGGCGTTCGGTGCCTTTTTCTGTCAAAAGCAGCGCGATTTCCGCG  
 TATTTTTCGGGCTTTTGATGGCGGAAGCCCAATCTTCGAGCTGCCATTTGAGCTGCCAC  
 ACGCCCAAACGGTTGGCGAGCGGGGCGAAGATGTCGAGGGTTCTTTGGCGACGGCGGT  
 TTTTCGGGCTGTTCGGGGCGTTGCTTAAAAATTGCAGGGTGCCTGACGCATCGCCAGT  
 TTGATTAACACGACGCGGATGTCCGTAACCATCGCCAGCAGCATTTTCCGCATAGTTTCT  
 30 GCCTGCTGGGCGCGTTCCTCCGGCGTGGCGAGGCTGTCCACCCGGGCGAAGTGGGTGAGT  
 TTCTGCACTTCGTCCACACCTTTGACCAGCTCGGCGACGGTACTGTTGCAGCGTTCGGAA  
 ACCAATAGGTTCCAGTCGGGACGTAGCGTCCGATGTCCGCAAGCAGGGTGGCGGCGACG  
 GCATCGGGGAGCAGGTCGAGTTCATGAACATTTGCCCGCGCCGAGGAAGTGGTCGGGC  
 AGCGGCTCGCCATACGGCGTGGCGGCATCGGCGGGGTAATGTTCTGCGCCAGCAACCAT  
 35 GCGGTACCGATGAGGTTTTTATCGTTGTCCGGCAGAGC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 80>:

#### gnm\_80

CCAGGCTTGGGTCTGCACCATGTTGTTTTCTAAATATTGCTGCCTTTGAAAACTTTAA  
 40 AACCGCCATCGAAATCACCGCCGCGGGAATCGACGAGGCAAACGTCAGCCCGACTTTCAA  
 ACCGAGGTAAACATTGGACGCAGTAAAAATTACAGTGATCAATGCACCGAGTATCATGCC  
 TCGGAGCGTCAGCTCGCGGTATTCTTCTACCGAACTGGATAAAGATTTATTCATTATTCT  
 TCCTTTGACAACAGACGTTACATATTGTTGGCATCACGCCATGATGTCAAGTTTTAAAA  
 AGAACAGTTAAAAACAGTTATCCACCCCTGCCATACCCATTGAAAAATAAAACTATT  
 45 TTTAAACAAATAAAAAACAGCCGTATCAAGGAGATCCCCGATACGGCTGCTTGTTCGGA  
 ACCTTAAATCAATCAAAACAAATCGCGCAGCTTGCTAAAAACGATTTCTGCGCGGTGT  
 TTGGTTTTCCAAGCCGGTAGAAATCCGCTCAAATTCTTCCAAAAGCTCTTTTGACGGTC  
 GGTCAAATTGACAGGCGTTTCGACAACAATATGGCAGTACAAATCGCCGGTCGCGCTGCT  
 GCGTAAAGATTTGACACCTTACCTTTCACGCGCATCCTCCTGCCGTTTGGGTTTCTTT  
 50 GGGGACGGTGAGCTTACCTTTCCGTCCAAGTCCGCACTTCCAATCCCCGCCAAAGC  
 AGCCGTGGCAAACCTGATCGGCAGTTCCGAATGCAAGTCCAGACCGTCGCGTTGGAAAT  
 CTTATGCGCCCGAATGCGGACGGTTACATACAAGTCGCCGGCAGGCGCACCGTGCATACC  
 CGGCCCGCCTTCGCCGCTCAAACGGATACGCTGCCGCTCATCGATACCGGCGGGAATATT

5 GACTTCCACCGTCTTGACCGCCTTATTCCGCCCGCGCCACGGCATTGACGCAAGGTTCTT  
TTAATGTGTTTGCCCGCACCGTGGCAGGTCGGACAAGTCTGCTGCATACGGAAAATCGC  
CTGCTGGATGTGCACCGTACCCGAACCTTTGCAAGTCGGGCAGGTTTCCGGGGATGTCCC  
CGGTTTCGCGCCACTGCCGTTACAGACATCACACGCTTCATAAGTCGGAATATTGATGCG  
10 TTTCTTCACACCTTTTTCGGGCTTCTTCAAGCGTGATTCGATACCGACTTGAACGTCTC  
ACCTTGATAATCAGGCTGGGCGCGCCCCGAACCGCCTCCAAACATTTGGCTGAAAATATC  
CCCAAAGTCAAACCCCTGCGCACCGCCAAATCCGCCAAACCCCTCCGAAGCCCCCTGTCC  
GCCGCTTCAAACGCCGCATGACCATACTGGTCGTACATAGCGCGCTTTTCCTTGTGCGGA  
CAAAGTTTCATACGCCTTTTGTACTTCTTTAAACTTCTCTCCGCTCTTTATTGTGTCAGG  
15 ATTGCGGTTCGGGATGGTATTTTCATCGCCAATTTCCGGTAGGCTTTTTTAATCTCATCATC  
GGTAGCTGTTCTTGCCACACCCAGCGTCGCATAAAAAATCTTGATTACTCATTTTTTCATC  
TAATTCAAATAAAATCACGGCTCAAATAAGGGCAATTGCGCAAAACACAAGACAAACA  
GACTGCCATAGCTTACAACTGAAACGGAATACACTTTTCAGACAGCATAAACCGATGCC  
GTCTGAAATCTTCAGGTATGCACGACACAAAACTTAGATAGGCATAAAACCAACCGCCA  
20 TGAAGTGTTTTTGTATAAAAACGCCGCCGAACGCATGTTTCAGACGGCATTGATGCGG  
CTGCAGACTTCCCCCTATTTATTTTTTATCCGCGGGCAGCACTGGTTTGGCTGGGCCTT  
TTGGTGCGGGCGCGCCGACGGAAGCCTGATCCTTCAGCTTCGCCAGCACCGCAGGGCCTA  
TGCCTGGCAGCGCTCCAACCTCTGCTGCGAAGCCGCATTGATGTTTACCGCCGCAAGGG  
AGAAGGCGCAGGAGAACAGCATACAGAACAGCACGAACATTTCTTCATGGTTTTTCCTT  
25 TAAGGGTTGCAACAATAAACCGCATCTTGCACGATAAACGAGTCATTCTAAAATGAA  
TATCCCAAAGTTTCAAGCGCTTCTTCGCCAAACCCGACCGGACACCGTACGGATGCCGTC  
CCGCCATCACCGACATTTTTCGGGCAAGCAAAACATTTTTTCCGGGCAAGCAAAAAC  
CCCCGAATAATCGGGGGTTTTCTGAATGGGTGTTTGGCAGTGACCTACTTTCGCATGGAA  
GAACCACACTATCATCGGCGCTGAGTCGTTTTCACGGTCCTGTTCCGGATGGGAAGGCGTG  
30 GGACCAACTCGCTATGGCCGCCAAACTTAACTGTTACAAATCGGTAAAGCCTTAATCAA  
TATATTCGGTAATGACTGAATCAGTCAGTAAGCTTTTATCTCTTGAAGTTCTTCAAATGA  
TAGAGTCAAGCCTCACGAGCAATTAGTATGGGTAGCTTCACGCGTTACCGCGCTTCCAC  
ACCCACCTATCAACGTCCTGGTCTCGAACGACTCTTTAGTGCGGTTAAACCGCAAGGGA  
AGTCTCATCTTCAGGCGAGTTTCGCGCTTAGATGCTTTCAGCGCTTATCTCTTCCGAAC  
35 TAGTACCCGCTATGCAACTGGCGTTACAACCGGTACACCAGAGGTCGTCCACTCCGG  
TCCTCTCGTACTAGGAGCAGCCCCCGTCAAACCTTCCAACGCCCCTGCAGATAGGGACCA  
AACTGTCTCACGACGTTTTAAACCCAGCTCACGTACCACTTTAAATGGCGAACAGCCATA  
CCCTTGGGACCGACTACAGCCCCAGGATGTGATGAGCCGACATCGAGGTGCCAAACTCCG  
CCGTCGATATGAACTCTTGGGCGGAATCAGCCTGTTATCCCCGGAGTACCTTTTATCCGT  
40 TGAGCGATGGCCCTTCCATACAGAACCCGATCACTATGTCTGCTTTTCGCACCTGCT  
CGACTTGTCGGTCTCGCAGTTAAGCTACCTTTTGCCATTGCACTATCAGTCCGATTTCCG  
ACCGGACCTAGGTAACCTTCGAACTCCTCCGTTACGCTTTGGGAGGAGACCGCCCCAGTC  
AAACTGCCGTACCATGACCGGTCCCCGACCCGGATGACGGGTCTGGGTAGAACCTCAAAG  
ACACCAGGCTGGTATTTCAAGGACGGTCCACAGAGACTGGCGTCTCTGCTTCTAAGCCT  
45 CCCACCTATCTACACAAGTGACTTCAAAGTCCAATGCAAAGCTACAGTAAAGGTTACAG  
GGGTCTTTCCGCTAGCAGCGGGTAGATTGCATCTTCACAACCACTTCAACTTCGCTGAG  
TCTCAGGAGGAGACAGTGTGGCCATCGTTACGCCATTCTGCGGGTCGGAACCTACCCGA  
CAAGGAATTTGCTACCTTAGGACCGTTATAGTTACGGCCGCCGTTTACTGGGGCTTCGA  
TCCGATGCTCTCATATCTTCAATTAACCTTCCAGCACCGGGCAGGCGTCACACCCTATAC  
50 GTCCACTTTTCGTGTTAGCAGAGTGCTGTGTTTTAATAAACAGTCGCAGCCACCTATTCT  
CTGCGACCTCCGGGGCTTACGGAGCAAGTCCTTAACCTTAGAGGGCATACTTCTCCCG  
AAGTTACGGTATCAATTTGCCGAGTTCTTCTCCTGAGTTCTCTCAAGCGCCTTAGAATT  
CTCATCCTGCCACCTGTGTGCGGTTTTCGGGTACGGTTGATTCAAACCTGAAGCTTAGTGG  
CTTTTCTGGAAGCGTGGTATCGGTTGCTTCTGTGTCGTTAGACACTCGTCTGCTACTTCTC  
55 GGTGTTAAGAAGACCCGGATTTGCCTAAGTCTTCCACCTACCGGCTTAAACAAGCTATT  
CAACAGCTTGCCAACCTAACCTTCTCCGTCCCCACATCGCATTTGAATCAAGTACAGGAA  
TATTAACTGTTTCCCATCGACTACGCATTTCTGCCTCGCCTTAGGGGCCGACTACCCCT  
ACGCCGATGAACGTTGCGCAGGAAACCTTGGGCTTTTCGGCGAGCGGGCTTTTACCCGCT  
TTATCGCTACTCATGTCAACATTCGCACTTCTGATACCTCCAGCACACTTTACAATGCAC  
60 CTTTCATCAGCTACAGAACGCTCCCTACCATGCGGTAAACCGGCATCCGCAGCTTCGG  
TTATAGATTTGAGCCCCGTTACATCTTCCGCGCAGGACGACTCGACCAAGTGAAGCTATTAC  
GCTTTCTTTAAATGATGGCTGCTTCTAAGCCAACATCCTGGCTGTCTGGGCCTTCCCACT



TCGTTTACCACCTTAATCTATCATTTGGGACCTTAGCTGGCGGTCTGGGTTGTTTCCCTCT  
TGACAACGGACGTTAGCACCCGCTGTCTGTCTCCCGAGGAACCACTTGATGGTATTCTTA  
GTTTGCCATGGGTTGGTAAGTTGCAATAACCCCTAGCCATAACAGTGCTTTACCCCAT  
CAGTGTCTTGTCTCGAGGCACTACCTAAATAGTTTTTCGGGGAGAACCAGCTATCTCCGAGT  
5 TTGTTTAGCCTTTCACCCCTATCCACAGCTCATCCCCGCATTTTGCAACATGCGTGGGTT  
CGGTCTCCAGTACCTGTTACGGCACCTTCAACCTGGCCATGGATAGATCACTCGGTTTC  
GGGTCTACACCCAGCAACTCATCGCCCTATTAAGACTCGGTTTCCCTACGCCTCCCTAT  
TCGGTTAAGCTCGCTACTGAATGTAAGTCGTTGACCCATTATACAAAAGGTACGCAGTCA  
CACCCTAGGGCGCTCCCCTGTTTGTATGCATCAGGTTTCAGGTTCTGTTTCACTCCCC  
10 TCCCGGGGTTCTTTTCGCCTTCCCTCACGGTACTGGTTCCTATCGGTCGATGATGAGT  
ATTTAGCCTTGGAGGATGGTCCCCCATATTCAGACAGGATTTACGTGCCCGCCCTAC  
TTTTCTAGCCTTAGTACCGCTGTGAGATTTTGAATACGGGACTGTCAACCACTATGGT  
CAAGCTTCCCAGCTTGTTCTTCTATCTCGACAGTTATTACGTACAGGCTCCTCCGCTTC  
GCTCGCCACTACTTGCGGAATCTCGGTTGATTTCTTTTCCCTCCGGTACTTAGATGGTTC  
15 AGTTCTCCGGGTTCCGCTTCTCTAAGTCTATGTATTCAACTTAGGATACTGCACAGAATGC  
AGTGGGTTTCCCCATTTCGACATCGCGGGATCATTGCTTTATTGCCAGCTCCCCCGCT  
TTTCGAGGCTTACACGTCTTCGTGCGCTATCATCGCCAAGGCATCCACCTGATGCACT  
TATCACTTGACTCTATCATTCAAGAACTTCTTTGACTTTGCCTAACATTCCGTTGACT  
AGAACATCAGACTTGAATTCCTACTTTGATAAAGCTTACTGCTTTGTTGTGTCTTAATC  
20 CTGCCTTTTGTGTTTCAGGATTAAGTCGATAACAATCATCAACCAAACTACTGTGTTGTTT  
TCTTTCTCTTTCGAGAGATTTTATCCTTTTGCAAAGAATAAAAAATCAAAACAAACGCT  
TTGTCTTTGTTTGTGATTTCGGCTTTCCAATTTGTTAAAGATCGATGCGTTCGATATTG  
CTATCTACTGTGCAATCAAATCGAGCTG

25 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 81>:

**gnm\_81**

CATGCTGAACGTTTGGCTGACATAAAGTTAAATGAGTCAGTCCGCTATAATTGATGAAAC  
GGGTTAAAAAAGTGTGGCATCGCCTGTTCTTCTTGTGGGATACGCTTAAATAAGACCAG  
CAAATAAATGGGCAGGCCAATCAATAAAACATACCAGCTTGACATAATAAGGCGATGCC  
30 AATCAGTTTCGGGTATGATGTTTAAAAAATAATTGGGGTGGCGGAATGTTTAAACAACCA  
CGAACGATTAATTTGATGATTTGGTAAATATAGATTTTAACCGTCCAAATCTCCCCCAA  
CTGCTTAATAATCAATGACAATATCACAAACGAAGCCATCACCGTCAGCGTACCAATCAA  
GGATATGCCATTAAGCAGTGTGAGAAAGCCATACCCAAACAAAACACGCCAAATAATA  
AAGCGTATGAAGTCCGCAAGCAGCGTGAATGTTTTCGGTATTGTTTCGCCCCCTTT  
35 GGCAATCAAGGCTTTTTTATGTTTAAATAGAGACGGCTAAAAATAACAGTCTGATGATAAA  
AAACAGGCTTAAATGCTTAAATCATTGTCAATTGATGTTTTTCCATTGAAATGAAATA  
AATATAAATCGGATTAATGGTATTTTAAATTAATGATGTTTCAGACCATCATGCTCTATA  
ACAATTTCCCATTAAGTCCGCGCCGCAACCTGCTATAATAAGTCTGCAATCGGCGCAAAT  
CAATGCTTTGCGTTTATTGCCATCCCAAAATAATTGATGCTGCCTTAATTATAATACCAA  
40 GATAAGTTTTTTTATTCATAAAATACAAAGGGAAGCGTTCAGCCCATTGCAAAACAGATG  
CAATCCACCGATTATTTAAAAACGGCAAAGCCTTGCCCCCTTGCGGCAAGCCTGCAAT  
GCCTTTAATGTCCGAGGCGCAAGCGTCGCCGTGGTGCCCGCAACCTGTGCCGTTTCGA  
GCCATTGCTCGTCATCGCCGTCAAACCTTCCACTTCGTCAAACCTCGCCGCGTTCCACCA  
TGACGCACAACCTCTCAAGGCTTTCGCGCCTTCCACCCAAAAACAGGGAATGCCCGGCG  
45 GCATATCGGGCGCAAGCAGTGCCGCTACGCCCTCATGCCACGCAATCCAATAGCCGTTGT  
CCGTACGGACGAATTTGTGCGTTTTTGGTTGACCGACTCGCCTTCCGTACCTTCCAGCATA  
GTTCCGCAATGTCGGTTTGAAAAGATAAAATCTGCATAAGTGTTTCTTTATATGATGGTT  
TTCCGTCAAACAAGGTGTTATAGTGGATTAAATTTAAACAGTACGCGGTTGCCTCGCC  
TTGCCGTACTATTTGTACTGTCTGCGGCTTCGTGCGCTTGTCTGATTTAAAGTTAATCC  
50 ACTATATTTTAAACATCGCGCCCGCTTGAGAACTGCCAACCGCTTTATAACAAATTCG  
TCTTTGCACCAAACCTTCCATTCTTCCGTTTTTCGGACGGCATCGTTAAAGTAGTCCTT  
CCTTTTCTTATTTTCAGCATTGTTTTATGTTAGCGCTCAAACGCCCCGGCGTACTGCC  
GGCTTCAAACCTCAGCCTTGGTCTGACCGTATTGTGCCTGTGCTGCTTGTGGTCTTGCCG

TTTGCATGATGGCGGCGAAGGCGGCGGAAATCGGCTGGGGCGGCTTTTGGAAACACGATT  
GCCGAGCCGAACGTGTTGGCGGCGGTATGGCTGAGCTTGCGGATGTCGTTTTATGCGATG  
CTGACCAATGTCGTGTTCCGGCAGCTGGTGGCGTGGGTATTGGTGCGTTATGAATTCCCG  
GGCAAGGGTCTGGCGAACGCGCTGGTCGATTGCCGTTTGGCGTGCCGACGGCGGTTACG  
5 GGTATCGCGTTGGCAACCCCTGTATGCGCCCAACGGTTGGATAGGCCSTTTTTTCGAGCCT  
TTGGGCATCAAAATCGCGTTTACACCCGTCGGCATTGGATTGCGCTGGTCGTGTCAGC  
CTGCCCTTTATCGTCCGCGCCGTGCAGCCGGTATTGGAAGAATTGTCGGGCGAATATGAG  
GAAGCGGCGGCAACTTTGGGCGCAAGCCGTTGGACTACGTTTCCGCGTGTCTCTTGCCCT  
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10 TACGGTTCGGTGATTTTTATCGCGGGCAACATTCCGATGGTTTCTGAAATCCTGCCGCTG  
ATTATTACGGGCAAGCTGGAACAGTTCGACGTGCAGGGCGCGTCGGCGGTGGCGTTGTTT  
ATGCTGCTGGTTTTCGTTTGTGATTCTGTTTGGCGTGAACGTGATGCAGTGGGCGTTGGGC  
AGGCGTTTCGGGCGCGAAGGGTTGAGGTCGTCTGAAATACCTGTTACCGTCATTCCCGCGC  
AGGCGGGAATCCATTGGTGAATTTGGCTGCCTTATTTATTTTCTGTTTTCTGTTTGCCC  
15 TGCGGTGGATTCCCGCCTGCGCGGGAATGACGGTAGCTAGACGTTTTTATTCCTTAATC  
AATAAAAGGTTGTCTGAAAACGAATCCGCCCCACAAAAACGGTTTTTCAGACGGCATCC  
AAACATTTTAAACCAACCAGAGAACACCACCGCCATGAAACCTATTCGCCCAATCCCA  
ACCTGACCGAACCGCGCCGGCTGCGCGTGTGCTGATTGCCGCCGCGCTGGGCTTTCTGC  
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20 ATTTGTACCTGAAATCCTTAAACGATCCCGAAGCGTGGTCTGCCATCAAATTGACGCTGA  
TTACCGCGCTGATTGTCTGTTCCCGTCAATGCCGTATTGGGTGTGGCGATGGCGTGGCTGC  
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CCGTATCGCCCGTGGTGGCCGTTTTGATGTTCTGCTTATTGTTTCGGCGCGCATACGGCAT  
TGGGTGGCTGGCTCGAAGCGCAAGGCATACAGATTATCTTCGCCATCCCCGGTATTGTTT  
25 TGGCGACGCTGTTCTGTTACCTTCCCTTTGTGCGACGCGAAATCATCCCGCTGATGCAGG  
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30 CATTCGCCCTCTCCGGCGTATTGGCACTTTTGGCACTGGCGACGCTGGCGGTGCAGAACA  
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CACCATCCAAAACCTTAAACAAACACTTCGGCAATTTTACGCGCTGAAAAACATCAACCT  
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35 GCAAGACGTAACCGCCAAACATGTGCGCGAGCGCAAAGTCGGCTTCGTGTTCCAACACTA  
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CAAGTCCGAACGCCCCGTCCAAAGGACAAATCCGCGCCAAAGTCGAAGAATTACTCAAGCT  
CGTGACGCTCTCTCTATTGGCAAAATCCTATCCGCACCAACTCTCCGGCGGGCAACGCCA  
GCGCATGCGCCCTCGCCGCGCGCTTGGCGTCAACCCAAACTCTTGCTTTTGGACGAAAC  
40 CTTTCGGCGCGTTGGATGCCAAAGTACGCAAGAATTACGCACCTGGCTGCGCGACATCCA  
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TTCCGACGAAATCGTCGTGATGAACACGGCAAAATCGAACAACCGGCAGCGCCGAAGC  
TATTTACCGCAAAACCGGAAATGCCTTCGTTACCGAGTTCTTCGGCGAAACCGACGCTTT  
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45 GCAATACAAATGGCAGGAACAAACCGCCACCGGCTATATCCGCCCGCACGAATGGCAGAT  
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CGCATTGACGCATATTCTGGTAAACACGACAAACAGGACGTACATATCACGCTGGCAGG  
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50 TGCCGCTGTAAGGCTTTTCAGACGGCATTGTGCTTTCAAGCGTCAGGCAAGAAACAGCTT  
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ACCGTGGTTGCGGTAATGGAAGCGTAATATCCACCCTCCCTGCATATGGTTCAAAAA  
GCGTGCCAATGCCCCCGGACGCTCCGGAAACTCAAACTGACCAAAACGCTCGTTTTCTAC  
55 TTGTCCGCTCCGCCCTCCGACCATATAGCGGATATGATTTTGGCAATCTCATTGTTGGT  
CAAATCGACATTGGGCAATCCCGCCTCATCAACCGGCTGCCGATAACCGCCAAATCCTG  
CGGGCCTGCCGCTTGAAGTCCGACAAAGATATGCGCTTTTTTCATCGTCTCCGTAGCGGTA

GTTGAACTCGGTAATATTCCTATTTCCCAATATATTGACAACTTAAGGAAGCTGCCGCG  
TTCTTCAGGGATGGTAACGGCAAAAATACCTTCGTTGCCCTCGCCCAATTCGCTCCGTTT  
CGAAACGTGGCGCAAAACGGTGAAAATTCATATTCGCACCGCTGGTAACGGCAATCAGGGT  
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5 CGCCGGCTCGGTAATGCTGCGCGTGTCTATCGAAAATATCCTTGACCGCGCCGCAACCGC  
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TCCGACGACTTTGACCGCAGTGCCGTCTGAAAACAGCCCGACATCTTTCAAATGGACGAT  
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TTTGATTTTCGGGACGGACCTGCTTGATAAATGCCGCCACGCCCGCCGCAACCGCCACC  
10 GCCTATCGGTACGAATACGGCGCGGATTTGGATCGGGATGCTGGCTGACAATTTCCATCCC  
CACCGTCCCCTGTCCCGCAATCACATCAGGATCATCAAACGGCGCGATATAGGTTAACCC  
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AACCACCTCGCCGCATGGCTTTTAACCGCATCCACTTTGATTTTCGGCGTAGTCTCCGG  
CATAACGATAACGGCACGGCAGCCCAAACGCTGTGCGGACAATGCCACGCCTTGAGCATG  
15 ATTGCCCGCGCTTGCGCAATCACGCCGAAGCGAGCGCATCTTTTCGGCAACTTGGACAT  
TTTGTGTACGCGCCGCGTATTTTGAACGAAAAACCGGCTGCAAATCTTCGCGTTTCAA  
AAGGATGTTGTTTTTCAAACGTACAGAAAGGCTGCGTGCCGGTTCCAAAGGCGTTTCGAC  
CGCCACATCATAGACAGATGCCGTCAGGATGCGGATGAGGTAATCGGAATAAGGAAGGGG  
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20 CGCCCAAGACGGCGCGAAATCAAGAAAAATCCGCCCGATCAGACACCCTAAGCGTATAAT  
CGGCAGACTGAAACACGCACACAATTAGAATATTTTCATGACAGCACATAAAATCCTGCCC  
GTCTTGCTTTCCATCATCTTAGGCGTTTCTCACGCAACGGCTGCATCGCCCGCGCCCAAC  
AGACCGACGGTACACGCCGCCCCACGTTCCAAACACCCGAAACCCTCACAGCGGCACAC  
ATCGTTATCGACCTTCAAAGCAAACAGATTTTATCCGCCAAAACATCAATACCCCTGTT  
25 GAACCGGCGGCACTAACCCAACTGATGACCGCATATCTGGTTTTCAAACATGAAATCG  
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AGCAGAATGTTTGTACGTCCCGCGCATACGGTCAGCACCGACAACTCTTAAAGGCATG  
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30 GTATTCAAACCCGACAGGCTTGAGTAGAGAAGGACAGGTTTCCACCGCCAAAGACCTC  
GCCCTGCTGTCTGAAGCATTGATGCGCGACTTTCCGGAATATTACCCGCTGTTTTCCATC  
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AACAATGTAAACGGTCTGAAAGCCGGACACACAGAAAGCGCGGCTACAACCTTGCCGTG  
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35 ACACGCGCATCAGACAACGCAAGCTGCTGAACTGGGCATTGCAGGCCTTCGATACGCCC  
AAAATATATCCGAAAGGCAAAACCGTTGCCCAATCCAAATTTCCGGAGGCAGCAAAAA  
ACCGTCCGCGCAGGCTTCTCAAAGAAGCCTACATCACTCTGCCACATAAGGAAGCGAAA  
ATGGCAGAACAAATCTAGAAACCATACAGCCGATTCCCGCCCCAGTAAAAAAGGGCAA  
ATTTTAGGAAAAATCAAATCAGACAAAACGGATACACCATTGCCGAAAAAGAAATCGTC  
40 GCACTGGAAAATGTAAAAAAGAAGCCGGTGGCAAAGGCTTTGGGCGTGTCTGACAGGG  
CAGTAATCTGCCGTTTCAAATATCCCGTTTTTCCAACAAATAAAGAAATGCCGTCTGAAA  
CACGGTTTCAGACGGCATAAAACAACAGGGCGGTACGTATTGCATACGCGCCGCCCTGCTG  
CTGAAATCAATTAGCGTTTCTTACCGGTAACGGTAGCAACAGCCAGATTTTCGTTACGTT  
TCAGGGAACGCTTTCTACACCTTCAGGCAGTTTGTATGTCTGACAAGTGCAGAATGTCGC  
45 CGGCAACCACTTCAGCACAAATCCAAATCCAAGAAAGCAGGGATGTTGGCAGGCAAAGCAA  
CTACTTCAACAGAAGTGTTAACAGAGATACGCGGCCGCTTGCAGTTTGACCGCTTGGG  
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CGATAACGTCTTTGGTTTCACCGTTCAGAGACAACTTAATCAACGCAGTATGGAAAGATT  
50 CTTTTTCCAATGCGTAGAATACGGTTTTTGTGATCCACAGCGATTGCAACAGGCTCTTGAC  
CTTACCGTACAGAAATGCCGGGGATTTGGCCTTCGCGACGCAGGCGGCGGCTCGCACCAG  
TGCCTTGTGCTTCACGAACAGAGGCTTGAATTCATAAGTCATGTTAAATACTCCAAGTT  
AGGTAATAATCCCGTTCATCGGCCGCGACCGCTTAAGACGGCTTCGGGCTTATGGCAGCA  
ACATGCTGCCTGTCTCACTTCTTCAATGAAAAGATATGAGACGGATTCTTCATTGCTAA  
55 TGCGGCGGACGGTTTCGGCCAACAGACCGGCAATCGTTACCTGACGGATACGGTCGCAGT  
TTTTAGCCGCTTCAGACAAAGGAATGGTATCGGTTACGACCACCTGGTCGATTTCCGATG  
AGGCGATACGGCTGACCGCCTCTCCGGAGAATACGGCGTGGCTGGCATAGGCTAGAACAC

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GTTCAGCCCCCGCTCTTTTCAGGGCGACGGCGGCTTTGCACAGCGTATTTGCAGTGTCAA  
 TCATATCGTCCACAATCAGACAGGTTCTACCTTGAATATCGCCGATGATGTTTCATGACTT  
 CCGCCACATTGGCTTTTCGGGCGGCGTTTGTGATGATTGCCAAGTCGGCATTTCAGGGATT  
 TTGCCACGGCGCGGGCGCGGACGACACCGCCGATGTCCGGGCTGACGACGGTCAGATTTT  
 5 CAATCCGCTGTTGTTTGTGATGTCGTTCAACAGAATCGGGGTGGCATAAATATTGTCCACCG  
 GAATATCGAAGAAACCTTGAATCTGGTCGGCATGCAAATCGACAGTCAAAACACGGTCGA  
 TCCTGCCGAATACAGCATATTTGCCACCAGTTTGGCAGAAATCGGAACGCGACGGAAC  
 GCGGACGGCGGTCTTGGCGCGCATAGCCGAAATACGGAATGGCTGTGGTAATACGACCTG  
 10 CCGAAGCACGCTTCAGTGCATCCGCCATCGTCAGGATTTCCATCAGGTTGTCATTGGTCG  
 GCGCACAGGTCGGCTGAAGGATGAAAACATCGCGCCCGGTACGTTTTCCAACAGTTCGA  
 CGGCAACTTCGCCGCTCTGAAAACCTGGATACGGAAGCATTGCCCAAAGAAATGTCCAAAT  
 GCCTGACAACACGTTGTGCCAATTCGGGATTGGCATTGCCTGTAAATACCATCAAACCTGT  
 CGTACGCAGCCATATTCTCACCTGATTTTATGTTTAACTTCGCTCAGAAAACACAATGC  
 TTC

15

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 82>:

### GNMCB20F gnm\_82

GCAGGTCGACTCTAGAGGATCCCCAGCAAATGGGGCAAGGTTCAAATAGGAACACCATCT  
 GCAGATTTTGGCATTATCACTTTAGATAGTGGCGATGGATATGCCGTTTCATGCCATCAT  
 20 CCGGAAATTTTTACGCTAATCCTAAAAGAAGAAGGATTGGATGAAGATTTCAAATCGGT  
 ATCGAAGGGCGCTCTCATCGCGATTGTGATGCTGAAGAACCACAAAGTTATCCATATCGAA  
 GATAACGCACCATTTGAAACCCCATGAAACCTGCTGCCGTTTAAATCATCTACTGATGAT  
 TACTTAGGCAAATGTGCCGTCCTCCCTTTTCAGACGACCTTTTCATTGCGGAAACCGCC  
 25 GCAAAGGTTGTCTGAAAACCGTTTTCATCCCGTTTTACAAACAAACCGAAAGCCCCAC  
 ATGATCTCTTTGAAAACGACACTTTCCTCCGCGCCCTGCTCAAACAACCTGTGCAATAC  
 ACGCCGATTGGATGATGCGCCAGGCGGGCGTTATCTGCCCGAATACA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 83>:

### gnm\_83

30 CGGCGAAGCGCGCCGCGAAATCGCCGACTTTTTTAATTGATGCCGCCGCTTCAGGCGAAA  
 AATGGGTCTTGAACGGAAGCCGGTAATGTTGTCCTATCCGAAATGTTCCAATTTTGAGC  
 AGATCAAACAGGGTCTTATGTCGGTTCGACGGTTTTAATTCTGTTGCTAGTCATTTACG  
 GCTTCAGGCTTTTGATTAATTTTTTAAAGACATGGGCAAGGTTGGGATTGATTGATGGT  
 35 TATTGATTTTGGTTTTCTTCTCGGTTTCTTCTGGCTTTGTCTGTCGCTTTGATATTTAA  
 ATGACGTGTTTTAAATCAGGCTTTCAAACAACCTTTGAAAGGCAGAACAAATGAACAAA  
 CCGTTTTATCACGCAGGCGCAGTTGGCACTTTATAAATATCAGCCGTCAGCAAGTATTAT  
 GGTAACAATGGCATATACTTTCGCTAGTGAGCTTTTGGATTATTCAAAAGTTAATAAA  
 40 TTTATAATTTCATGAAGAAATCCAATGTTTTTTAAATAGAAGGATTCTAATAATATTTGG  
 AAAATTTATTTTCTGATGAGTCTGTTGCGTATATAAAAATTTTAGAATTACAGGATGAT  
 TATAGTCGTGGAATTGAAATTAAACGTTTGATTTTAAATCCTAATGTTGGGGATGTTTTTC  
 GGTAAATCTTATGCTGAACGTTTTAAGTATCCTATTGGAAATTCAGATGTTAGATTGGA  
 TATTGATCATAAAAAATCTGTAGTTACCGATTTTCGTGTTGATGGTCAGCGTTTTTCAGG  
 TCGAATTATCGAACCTTCAATAATAGAACACGTGCCAACAGGTGCACGCTCTCTTGAAAA  
 45 AGTCCCCGTAAATTTACCGCATCAGTTTCCCGCGCCGCGCTTGTGTCAGGAGTCGGCAA  
 ACTTGCCCGCTTAGGCGCGAAATTAAGCACAAGGGCAGTTCCTTATGTCGGAACAGCCCT  
 TTTAGCCCATGAGGTATACGAACTTTCAAAGAAGACATACAGGCACAAGGCTACCAATA  
 CGACCCCGAAACGACAAATTTGTAAAAGGCTACGAATATAGTAATTGCCTTTGGTACGA  
 AGACAAAAGACGTATTAATAGAACCTATGGCTGCTACGGCGTTGACAGTTCGATTATGCG  
 50 CCTTATGTCGATGACAGCAGATTCCCGAAGTCAAAGAATTGATGGAAAGCCAAATGTA  
 TAGGCTGGCACGTCCGTTTTTGAATTGGCATAAAGAAGAACTGAATAAATTAAGTTCTTT

GGATTGGAATAATTTTGTGTTTAAATCGTTGCACATTTAATTGGAATGGCGGAGATTGTTT  
GGTCAATAAAGGTGATGATTTTCAAGAAATGGGGCTGATTTTTCCCTTATTCGCAATTCAAA  
ATACAAAGAGAAATGGATGCCAAAAGCTGGAAGAGATTTTATCGTTGAAAGTCGATGC  
CAATCCCGACAAATACATAAAGGCAACCGGTTATCCCGGTTATTCGAAAAAGTAGAAGT  
5 CGCACCCGGAACAAAAGTGAATATGGGTCCCGTCACGGACAGGAACGGGAATCCCGTTCA  
GGTTGTCGCAACATTTCGGCAGGGATTTCGAAGGCAACACCACGGTGGATGTTCAAGTAAT  
CCCGCGTCCCGACTTGACCCCGGAAGCGCGGAAGCACCGAACGCACAGCCGCTGCCCGA  
AGTATCGCCCGCGAAAACCCCGCAACAACCCGAACCCCAATGAGAACCCCGGCACGAG  
CCCCAATCCCGAACCCGACCCGATTGTAATCCCGATGCAAAATCCCGATACGGACGGACA  
10 GCCCGGCACAAGACCCGATTCCCGCGCGTTCCGGGACGCACAAACGGCAGGGACGGCAA  
AGACGGAAAGGACGGCAAGATGGCGGCCTTTTGTGCAAAATCTTCCCGACATTCTCGC  
TTGCGACAGGCTGCCCGAGTCCAATCCGGCAGAAGATTTAAATCTGCCGTCTGAAACCGT  
CAATGTAGAGTTTCAAGAAATCAGGAATCTTTCAAGATTCCGCACAGTGTCCCGCACCTGT  
CACTTTTACAGTGTACTGTGCTTGATTCAAGCAGGCAGTTCGCGTTCAGCTTTGAGAACGC  
15 ATGTACCATAGCCGAACGGCTAAGGTACATGCTTCTCGCCCTTGCTTGGGCGGTTGCCGC  
CTTTTTTTGTATCCGCACAGTATCTCGTGAAGTCTAGCAGGCGCAGCACCGCCGGGCTTC  
AGTAACTTGTACCAAGGCAGGGGAGGACGTCCAGAAAGATTTGTAAAGACGGCTTTATC  
GTCTTTATAAATCTTTTGGATACCCCTTGCCGCCCCGCCAAAAGAACACATTCTGCCGC  
AAGGGCAGGTGGTAAGGCGCGCGCTTTTGGCGGTCCTTATGCCCCGCGCGGCTCGCAA  
20 GTGAGACTAGGGGGTGTGGGGGACTAGTCCCCCGCAAGCGTTAGCTTCGGAAACTTTG  
GCCGAAAGGCAGGCGAAGCAGCGCACTTTGCGACGAATGTGCAAAATAGCCGAGAAGCGC  
GGGGGGATTGGCGATAAGCGCGAGGGGGGTGTCCCCACAGCGCGCGCGCGCGAATGC  
GGCGCAAAATCTTTTCAAGTTAAGAAACATTTGTTTAAATGAGGCAACCGTGCCTTTAAGA  
AAGGGATAGCAAATGAAATGTTTGGCCGCATTGATTCGCTTTTGTATGAGCGTGGCAGGC  
25 CGTATATTGACTGCATTAGGCTTGATGGCGGTAACCTATTAGGGGTGGATAGATTGGTA  
GCCCATTTTACAGCAGGCGATAACCAATAGCATAACGGGCGCGCCTCAAGCGATGTTGCAG  
CTTTTTTATATAAGCGCGGTGGAACCGTTCTTAATATCTGTTTGGCGCGATCGCCTTT  
ATTCTGTCAATTCAAACAAATGACAAACTAGCAACCTCAATCGGGAAGAAAAATAAATG  
GCAGAGATCTGTTTGATAACCGGCACGCCCCGTTTACGGGAAAAACATTAAAAATGGTTTCC  
30 ATGATGGCGAATGATGAAATGTTTAAAGCTGATGAAAACGGCATAACGCGTAAAGTATTT  
ACGAACATAAAAGGCTTGAAAATACCGCACACCTACATAGAAACGGACGCAAAAAAGCTG  
CCGAAATCGACAGATGAGCAGCTTTCCGGCGCATGATATGTACGAATGGATAAAGAAGCCC  
GAAAATATCGGGTCTATTGTCAATTGTAGATGAAGCTCAAGACGTATGGCCGGCAGCTCG  
GCAGGTTCAAAAATCCCTGAAAATGTCCAATGGCTGAATACGCACAGACATCAGGGCATT  
35 GATATATTTGTTTTGACTCAAGGTCCTAAGCTTCTAGATCAAAATCTTAGAACGCTTGTA  
CGGAACATTACCACATCGCTTCAACAAGATGGGTATGCGTACGCTTTTAGAATGGAAA  
ATATGCGCGGACGATCCCGTAAAAATGGCATCAAGCGCATTCTCCAGTATCTATACACTG  
GATAAAAAAGTTTATGACTTGTACGAATCAGCGGAAGTTTATACCGTAAATAAGGTCAAG  
CGGTCAAAGTGGTTTTTACTCTGCCAGTAATAGTATTGCTGATTCCCGTGTGTTGTCGGC  
40 CTGTCTTATAAAATGTTGAGCAGTTACGGAAAAAACAGGAAGAACCCGACGACACAAGAA  
TCGGCGGCAACAGAACAGCAGGCAGTACTTCCGGATAAAACAGAAGGCGAGCCGGTAAAT  
AACGGCAACCTTACCGCAGATATGTTTGTTCGGACATTGTCCGAAAAACCCGAAAGCAAG  
CCGATTTATAACGGTGTAAGGCAGGTAAGAACCTTTGAATATATAGCAGGCTGTATAGAA  
GGCGGAAGAACC GGATGCGCCTGCTATTTCGCATCAAGGGACGGCATTGAAAGAAGTGACG  
45 GAGTTGATGTGCAAGGACTATGTAAAAAACGGCTTGCCGTTTAAACCATACAAAGAAGAA  
AGCCAAGGGCAGGAAGTTTCAAGAACGCGCAGCAACATTTCGGACAGGGCGCAAGTTGCC  
ACATTGGGCGGAAAACCGTAGCAGAACCTAATGTACGATAATTGGGAAGAACGCGGGAAA  
CCGTTTGAAGGAATCGGCGGGGGCGTGGTTCGGATCGGCAAACTGAAGAAAACGGCAAGAG  
AGAAAAAGACCCGTAAACCGTTTGAATATAGACGGTTTACGGGTCTTTGTTTCGCGCAA  
50 AGCAAGGGCTAAGGCAGTCAGGCAGCAAAATCCCGCAATGTATTAAACAGACGCGTAGAA  
ATGCCGGCTGCCCTTATCCATCCTCGAAATGAATATCATCCTAGCCGTATCAAGGCTGT  
ATAAATAAGGAAAATACCAATGAATATAATCGGGCTGGACATCTCAAAGGACACCATAGA  
CGCAACATTGCATAAAACAAACGGAAGTATCCATTACATTAAATTTAAGAATAATGATGA  
TGGATTAAACAGTTTAGATTGTGGATAAAGGGAACAGAATCAGAAAAGTCTATATCGG  
55 CATGGAGGCAACAGGCATCTATTACGAAAAGGCAGCAGATATGCTTTCTTCTACTATAC  
TGTTTACGTTATTAATCCCTTAAAAATCAAGGACTACGGAAAAAGCAGGTTTAAACGTAC  
CAAAACCGACAAAGCAGATTCAAACCTGATAGCAGACTACATAAAAGGCATCAAGATAC

-613-

ATTGATACCGTATCAGATACCCAAAAACAAAGCACTGCAAAAACCTGATTAACCTTAAAAA  
TCAATTACATCAACATCAGAAGCAAATTA AAAACCGTCTTCATAGCACTGAAGAAGACTT  
CATAAGGAACATACATCAAGACTTGATAGATACCATACAGGACAAGATGGAACAGGTAAA  
AATAGCCATATCCGAACAAATCAAAAAACAAACGGACAATAACCATTACCGCAATCTTCA  
5 AACCATCCCGAGCATAGGC AAAGACACCGCATCAGTTCTTTATGCGCAACTGACAGAAAA  
ACATTTTAAAAACCGCAAACAGTTTGTATCCTATGCCGGATTAAATCCCGCCATCATACA  
ATCAGGGACAAGCGTAAGAGGTCGGGGCAGATTGAGCCGATACGGAACAGACGATTAAA  
AAGTACGCTGTATATGCCCGCCCTTTGTGCTTACCGTTTAAACGCATTTCCGAAATTAAT  
AAATAATCTGAAAAAGCGGGTAAGCCAAAGATGGTAATCATCGTTGCCATCATGCGCAA  
10 ACTGGCGAAGCTCGCCTATTACATTGT TAAAACCGGCCAGCCTTACGATGCGGAAAGACA  
CCGATTGAATCAATAAAATTCAACAAAATTAAACGGTTACGCGAATATATTTGTGTAACC  
GTGCATTTGCATATCGTAAATAAACGTAAATAAAAAATAACAATATAAATCAGTATATTGC  
AACTTTGTTTTTTATTTTGTGTTGACGGGCAACATATCATCTGCGCGGGAATGACGGGAT  
TTTAGGTTTCTGATTTTGGTTTCTGTCTTGTGGAATGACGAAAAGTGGTGGGAATGA  
15 CGAAAAGTGGTGGGAATGACGTTT CAGTTGCTGCGGTTATTGTCAGGTTTCGGTTATGTT  
GGAATTTCCGGAACTTATGAATCGTCATTC CCGCGCAGGCGGGAATCTAGAATTTCAAT  
GCCTCAAGAATTTATCGGAAAAACCAAACCTTCCGCCGTCTTCCACGAAAAGTGGG  
AATCTAGAAATGAAAAGCAGCAGGAATTTATCGGAAATGACCGAACTGAACGGAAGTGGG  
TTCCCGCTTTCTGTTGGGAATGACGGGATGTAGGTTCTGTTGGGAATGACGAAAAGTGGCGGA  
20 ATGACGGAAGTGGCGGGAATGACGGAAGTGGCGGGAATGACGGAAGTGGCGGGAATG  
ACGGTTCCGGGCATTCTTAAATTACCCGTGTATCGCTGTAAATCTTAGAGATGGCGGAAT  
ATAGTGGATTAACAAAAACCACTACGGCAAGGCGAGGCAACGCCGTACTGGTTTTTGTTA  
ATCCACTATAATTGAAGGGTTATCGGCTTGTGCAACGGAAGCCCAAGTTGTGCAAGACA  
TATTTGGATTGCAGGCTGGTACGGATGCCGTAGCGGAGGAAGGCGGCATAGTTGGACGAG  
25 TCGCTCGACCCGATAGACGCGCCGTGCAAAACATTTGCGCGTTGGCATTGCCGGAAGAA  
AGCAGGCTGCTGTTGAAATCTTCCGTCCATTCCCAAATCAGCCCGTGCATATCATAAACG  
CCCCAGTAGTTCCGGCGGCCTTTGCCGACATCGTGCAGGCCTTTCCGTCCGCCGTGCGCA  
TACCAATCGAGAATAGTGCGGTTGTAGCCGGTTCGTTTGAGCCGTTTTCTGCGTGCGG  
GAAGCAAGTCCGGCAAATTTCCCATTCGTCAATGGTCCGCAGGCGTTTGCCTTGTGCGGCG  
30 CAATAGGCGTTGGCGGCAAACAGGAAACATTGGTTACCGGTTGTTTTAATTCGCCCGCC  
TTCGGCGCATAGCTGCGGCTGCCGTTTTTTCATCCAATGCTTCAGGTAAGCGGGTTCTGCC  
TGTTTGGAACCGATCCTGCCTTTTTGCCATTGGGGGTGGCTGTTGACAAATTCGGCAAAC  
TCGGCATTTGTTAAGCGGATATTTATCCAGTTTGAACGGTTTGACTTTAATCAGGCCGGTA  
TCTTTTTTTCAGATAAAGCGGGCGGTAGCTGCCGCTTCGATTTGAACCATTTCCGGCAGCC  
35 GCCGCTTGAGTGCCGCGAGTGCCGCGCCGAGGAAAAATAACCGGACATCTTCATAAAG  
CCTCCTGACAGGCGGTTAAATCAATCTTCCGAAAGGAAAGATTGGTTGTTAAAAAACCA  
CCGCCGTGCGTAATGAAGTACAGCGGCAGTGGTTTCGTCCCGCTAATGACGGGTATCCAAT  
TTAATAAACGCTTTTTTCGGATGCAGAGGCTGCCGGGCGAGAAGCTGCGGGAGCGGAAGC  
AGCAGGAGCTGCACCGTTACCGGCGTAAGCGGTATCACTCAATTTTTGAGTCATGATTTT  
40 AGGGTTTTCTGCACCTTCTACTTTCAATTGACCCAGTGCGCCCTTTGTTGAATGCGCGGAA  
GATAGAGTGGTCAACCAAAGTGTAGCTGCCCGGATGTCGACTTTGAATTCGACGATGGC  
AGAGCCGCCGGCAGGAACGATGGTGCCTTTGTACGTTTTTCGTTAATCAGTTTGCCGCCTTC  
AACATAAACCTTTGTCGAAGATTTCCGCCATGACGTGGAAGGAAGATACCAAGTTCCGACC  
GCCGTTACCAACGTACATACGTACAGTTTCGCCTGCTTTGGCTTTTCAGCGCGTTATCGCC  
45 GGCGATAGCACCTACGTGACCGTTGAATACGACGTATTCAGGCTGTTCCGCAACGGCTTT  
GTCCATATCGAACGGTTGCAGACCTTGCGCGCCTTTTTTGCCCTTTGGTGTAGAAGTCGCC  
TTGGACGATGTAGAACTCTTTATCCACTTTCCGGCAGGCCTTCTTTAGGCTCGACCAAAT  
CAGACCGTACATACCGTTGGCGATGTGCATACCGACCGGTGCGACGGCGCAGTGGTAGAT  
GTACAGACCCGGTTGCAGGGCTTTGAAGCTGAATGTGGAAGTACGGCCCCGAGCGGTAAA  
50 GGTGCGGCCCGCCGCCCTGGCCGATAGCCGCGTGGAAAGTGCAGCTTGTGCGGAAC  
GGTAGAAGAAGGATTGTTGGAAAATTCCAATTCAACCGTATCGCCTTCGCGTACGCGGAT  
CATACGGCCCCGAACGTGCGCGTCAAATGTCCAGTAGCGGTATTCCACACCGCTCTCCAT  
GGTCATGGTTTTTTTCGACGGTTTTCCATTTTACGCGGACTTTGGCGGGGTAGTCGCGGTC  
GATTGCAGGAGGCACTTCGGGAGCGTGGGTGGTAACCGCATCGATAACGGGCAGTTCCG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 84>:

**gnm\_84**

```
5  GTCGACTCTAGAGGATCCCCTGCGGATTTATTACGATATTACCGTATTCAGGCCGCACCG
   ATGCCGCCTGCCCCCGAAAACTTTGGAGAATCCAAAAATGTTTCATTTTGCATTTCC
   GGCACAACTGCCCTGCGCCAAGCGATAACCGATGCCTACCGCCGTAATGAAATCGAAGC
   CGTACAGGATATGTTGCAACGTGCACAGATGAGCGACGAAGAGCGCAACGCCGCCTCCGA
   GCTTGCCCGCCGTTTGGTTACCCAAGTCCGCGCCGGCCGCACCAAAGCCGGCGGCGTGGA
   TGCGCTGATGCACGAGTTTCACTCTCCAGCGAAGAAGGCATCGCGCTGATGTGTCTGGC
10  AGAAGCCCTGCTGCGTATCCCCGACAACGCCACGCGCACC GCCTGATTGCCGACAAGAT
   TTCAGACGGCAACTGGAAGGCCATTTGAACAACAGCCCTTCCCTCTTCGTCAATGCTGC
   CGCTGGGGCCTGCTGATTACCGGCAAACTGACCGCCACAAACGACAAACAAATGAGTTC
   CGCACTCAGCCGCCTGATCAGCAAAGGCGGCGCACCCGCTCATCCGCCAAGGCGTAAATTA
   CGCCATGCGGCTTCTGGGCAACAGTTCGTAACCGGACAGACCATTGAAGAAGCCCTGCA
15  AAACGGCAAAAGAACGCGAAAAAATGGGCTACCGCTTCTCCTTCGATATGTTGGGCGAAGC
   CGCTACACCCAAGCCGATGCCGACCGCTACTACCGCGACTATGTGAAGCCATCCACGC
   CATCGGCAAGATGCGGCAGGACAAGGCGTTTACGAAGGTAACGGTATTTCCGTCAAAC
   TTCCGCCATCCATCCGCGTACTCGCGCACCCAACACGGCCGCGTGATGGGCGAACTGTT
   GCCGCGCCTGAAAGAGCTGTTCCCTTTGGGTAAAAAATACGATATCGGTATCAACATCGA
20  TGCCGAAGAAGCCAACCGTCTGGAGCTGTCTTTGGATTTGATGGAGGCTTTGGTTTCAGA
   CCCTGACTTGGCTGGCTACAAAGGTATCGGTTTCGTTGTCCAAGCCTACCAAAAACGTTG
   TCCGTTTCGTTATCGACTACCTGATCGACCTTGCCCGCCGCAACAACCAAACTAATGAT
   CCGCCTCGTCAAAGGCGCGTATTGGGACAGCGAAATCAAATGGGCGCAAGTGGACGGCTT
   GAACGGCTATCCGACCTACACCCGCAAAGTCCACACCGACATCTCCTACCTCGCCTGCGC
25  GCGCAAACTGCTTTCCGCGCAAGACGCGGTATTTCCGCAATTTGCCACCCACAACGCCTA
   CACTTTGGGCGCAATCTACCAAATGGGTAAAGGCAAAGATTTTGAACACCAATGCCTGCA
   CGGTATGGGCGAAACCCGTGTACGACCAAGTCGTGCGCCCGCAAACTTAGGCCGCGCGT
   GCGCGTGATACGCCCCAGTGGGCACACACGAAACCCGTGCTCGCCTACTTGGTGGCGCCGCT
   GTTGAAAAACGGCGCGAACTCGTCTTTTCGTCAACCAAATCGTCGATGAAAACATCAGCAT
30  CGACACGCTCATCCGCAGCCCGTTTCGACACCATCGCCGAACAAGGCATCCACCTGCACAA
   CGCCCTGCCGCTGCCGCGCGATTTGTACGGCAAATGCCGTCTGAACTCGCAAGGCGTGGA
   CTTGAGCAACGAAAACGTATTGCAGCAGCTTCAAGAACAGATGAACAAAGCCGCGCGCA
   AGACTTCCACGCCGCATCCATCGTCAACGGCAAAGCCCGCGATGTGCGCGAAGCGCAACC
   GATTA AAAACCCCTGCCGACCACGACGACATCGTCGGCACAGTCAGCTTTGCCGATGCCGC
35  GCTTGCCCCAAGAAGCGGTTGGCGCAGCCGTTGCCGCGTTCCCGAATGGAGTGCGACACC
   TGCCGCGCAACGCGCCGCTGCCTGCGCCGTTTTGCCGATTTGCTGGAGCAGCACACCCC
   AGCACTGATGATGCTTGCCGTGCGCGAAGCAGGCAAAACGCTGAACAACGCCATTGCCGA
   AGTGCGCGAAGCCGTCGATTTCTGCCGCTACTACGCAAACGAAGCCGAACATACCCTGCC
   TCAAGACGCAAAAGCCGTCGGCGCGATTGTGCGCATCAGCCCGTGGAACCTCCCGCTCGC
40  CATCTTTACCGGCGAAGTCGTTTCCGCATTGGCGGCAGGCAACACCGTCATCGCCAAACC
   CGCCGAACAAACCGCCTGATTGCCGGTTATGCCGTTTCCCTCATGCACGAAGCCGGCAT
   CCCGACTTCCGCCCTGCAACTCGTCCTCGGCGCAGGCGACGTGGGTGCGGCATTGACCAA
   CGATGCCCGCATCGGCGGCGTGATTTTACCGGCTCGACCGAAGTGGCGCGCCTGATCAA
   CAAAGCCCTTGCCAAACGCGGCGACAATCCCGTCCTGATTGCCGAAACGGCGGACAAAA
45  CGCCATGATTGTGATTTCCACCGCACTTGCCGAGCAAGTCTGCGCCGACGTATTGAACTC
   CGCCTTCGACAGCGCGGGACAACGCTGCTCCGCCCTGCGCATTTTGTGCGTCCAAGAAGA
   CGTTGCCGACCGTATGCTCGACATGATCAAAGGCGCTATGGACGAACTCGTCGTCGGCAA
   ACCGATTACGCTCACTACCGATGTCGGCCCGTCATCGATGCCGAAGCACAGCAAAACCT
   GTTGAACCATCAACAAAAATGAAAGGTGTTGCCAAGTCCTACCACGAAGTCAAAACCGC
50  CGCCGATGTGATTTCCAAAAAATCCAGGTTTCGTTGCGCCCATCCTGTTGAATTGAACAA
   CCTCAACGAACTGCAACGCGAAGTCTTCGGTCCCGTCTGACGTCGTCCGCTACCGCGC
   CGACGAACTCGACAACGTCATCGACCAAATCAACAGCAAAGGCTACGCCCTGACCCACGG
   CGTACACAGCCGCATCGAAGGCACGGTACGCCACATCCGCAGCCGCATCGAAGCCGGCAA
   CGTTTACGTCAACCGCAACATCGTCGGCGCAGTCTGCGGTACAGCCCTTCGGCGGACA
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CGGTCTGTCCGGCACAGGCCCAAGCAGGCGGTTGTTCTACCTGCAAAAAGTACCCG  
 CGCCGGCGAATGGGTTGCCCCGACCTGAGCCAAATCGGACAGGCGGACGAAGCCGCACT  
 CAAACGCCTCGAAGCACTGGTTCACAACTACCGTTCAACGCCGAAGAGAAAAAGCCGC  
 AGCGGCCGCTTTGGGACACGCCCGCATCCGCACCCTGCGCCGTGCCGAAACCGTCCTTAC  
 5 CGGACCGACCGGCGAGCGCAACAGCATCTCATGGCACGCGCCCAAACGCGTTTGGATACA  
 CGGCGGCAGCACGGTTCAAGCCTTTGCCGCACTGACCGAATTGCCGCCTCCGGCATACA  
 GGCAGTGGTCAACCCGACAGCCCCCTTGCTTCCCTACACTGCCGACTTGGAAGGTCTGCT  
 GCTGGTCAACGGCAAACCCGAAACCGCCGGCATCAGCCACGTTGCCGCCCTGTGCCTTT  
 10 TTCGAAAAACGACTCGACATCCTGCAAGTGTGTTGAAGAAATCTTTCGACGCGTCAACAC  
 CACAGCCGCCGGCGGCAACGCCAGCCTGATGGCGGTGCGCGACTGATTTTCCGAAATAC  
 CCGGGCGCGGCCGTGAACCAATGCCGTCTGAAAACCTTTTACAGCGGCATTTTATAATG  
 GATTAACAAAAATCAGGACAAGGCGACGAAGCCGACAGACAGTACAGATAGTACGGAACCG  
 ATTCACCTTGGTGCTTACAGACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACG  
 15 CCGTACTGGTTTTTGTTCATCCACTATAACAGCAACCCGTGTCGCCGTGATTCCCGCAAAA  
 GCGGGAATCCAGTCCGTTTCAAGTTTCGGTCATTTCCGATAAATTCCTGTTGCTTTTCATTT  
 CTAGATTTCCACTTTTCGTGGGAATGACGGCGGAAGGTTTTGTTTTTCCGATAAATTCCT  
 TGAGGCATTGAAATTCAGATTTCCGCCTGCGCGGGAATGACGATTCTAAGTTTCCCGA  
 AATTCACATAACCG

20

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 85>:

#### gnm\_85

TTTGCGGATCAACCCGCCCGCTAGCCGGTCAGTTTGCCGTGCTGCCGATGACGCGGTG  
 GCAGGGAATCAGGATAGATACTTTGTTCTGCCCGTTGGCGGCGGCAACGGCGCGGACGGC  
 25 TTTGGGGTTGCCCAAACGCTGCGCCTGCTCCTTGTAGCTGCGCGTTTCGCCGTAAGGAAT  
 CGCCAAGAGCGCGTCCCATGCCTGCTTTTGAACTCGGTGCCAATCTGCTCCAAAGGCGT  
 GGCAAAGGTTTTTCAGACGACCTTGAAGTATAAGTCCAATTCTTCCGCAAAAGTTGCGT  
 CCGCTCATCTCTCCGAAACACAAACCGTCCGCGCAAGGCTTTTTGGACGGCGGCAATTTT  
 CTGTTCCAAATGCTTCTGTCCGACAAATTCAGCAACACAAACCCCTGCTACCGAACAC  
 30 CGCCAGCATCTCGCCCAAAGCGTGGCAATGGCGGCACACACCAGCTCGTTCAAACCTGTC  
 GGGATAACGCGCTTCCAACAGACGGATGGCGCGCGGATGCGGACATATTCTTCAGGCGC  
 GCAGCCGATATTGTCCCAAAATCCCGCTCGAAGTGTGTTGGCTTCGCATTCCGTGAGATT  
 GGGATGCGGCATAACGCCGCACTCAAAAACCCGAGATTTCGAGCCAATGGCGGATTTTCATC  
 CCATTTTGACGGCAGATTGTTAAGGAAGGCAGGTAATCATTGTTTGTCTCCGTATCCC  
 35 TATCATAGATTTGACGGCAAAATCCCCAATTTTGCCATTCCCGCACGCCGGAGCAGGAA  
 CGGGCTATGACGTAAATCTTGAGGTTAGGTTGCGGCAATACCTAAATATTCGATATTTT  
 TAAAGCATCAGAGAAAGGAATGTTTCAACACACAGGACGACACATAAAGCGCCGCCCAT  
 GAAAAATTTTACAGACACCTGCAAAGGTCGTCTGAAACACGATTTTGCATTTGCGCAT  
 TCTGGCACATCATCAACCGTTTCGGCACATTCTGCGCCGTTGACAGCCTATAATGAA  
 40 TCCACTTATTCATCAAGCAAAGGAATCATCTATGCAACCCCTCATCTCTCCGCCGTACT  
 GCTGGCTTTTTCAACCGCTGCCTTTGCCGGGGCGCATTACGCTGCAATTCGACAACCC  
 GTCCGAAGACGGCGGCTTCACGCAAAACAGCTTTTGAGCGCGCCTTACGGCTTTTGCTG  
 TTCAGGCGACAATGCTTCGCCCGCGCTGTCGTGGAAAAATCCGCCCGCCGGACAAAAGT  
 TTCGTCTTGACCGTTTACGATAAAGACGCGCCGACCGGACTGGGCTGGATGCACCGGGTG  
 45 GTCGCGGACATTTCCCGCGATGTCCACCGCCGCAACGCGACCTCGCTGCAATTAAGCCGC  
 TGCGCCAACATCGCCGACCGGACTGGGCTGGATGCACTGGGTGGTGGCGGACATTTCCCGC  
 CGATGTCCGCCGCGCAACGCGGCCTCGCTGCAATTAAGCCGCTGCGCCAACATCGCCGA  
 CGACCAGTCCGCAGCCATATCGGCGGTAATCAGTTTGCGGATTTGCCGCATCAGGTTGAC  
 GCCTTCGTACACGGCAAAACCGATGCCGTGCTGCAACCACGCCAACGCGCGCAAAG  
 50 CGCGGCCTCCGCAGCATTGTGCGGCACTTCTTCATCCGCCAGTACCGCAGCCTCATAATC  
 AAACGCCGCGCCATACGCCCGGAATACGGCAGCTTTACCGCATCGCACACTGCCTGCGC  
 CGTCCCGTATTGTGCGGCAACCTTTCTACGGTTTCTGTTTCGAAAGCAATCCATTGCGC  
 CTGATAGAGGCCGTCTGAATCGGGAATATTGATGACGTCAAACGTCTGTCCGCCTGCCAA



GGCGACCGCCTTACCCGCCGACGTTCTTACTTCCGCGCCGACGATAAGCACAGCCGGT  
TCATATACCGCCACGCTCGGGTACAAGGCGGTATGATGTTGCACGATGCCGCCCTAAAGCA  
CCCAATCGTTCGCGCGTATGAAAGTATAGTGGATTAAATTTAAATCAGGACAAGGCGACG  
AAGCCGCGACAGTACAAATCGTACGGCAAGGCAAGGCAACGCCGTACTGGTTTAAATTT  
5 AATCCACTATATCTCAAACCCACGTTAGGTCTAAGCAAATGGTCGGACATCCTTATCCGA  
CAGCCCATCTTCTTTTCAGACGGCATTGCAAATTTAAGTTTGACGTGCGTTCAAATAAG  
GCAGTTAATGCGAAGCGAAATTCGGTCGGCGTACCTGCAACTTGGCCCTCCCTTATAGG  
GGAGGGTCGGAGGGAGGGTAAAACGGGGCAGATACAGACAATATTTCCGTTGCCGCCCG  
ATGCCCTCTCCCTAACCTCTCCACGGGAGAGGGAATGGATTGCCGTTGAAATAAATCG  
10 CTCTACATAAAAAATCAATGTGTTATCTCAAACCCACATTAGGTCTAATCAAATGGTCGG  
ATATCCATATTCGGCAAGCAAGCTGCTTTCAGACGGCATTTCAGCCAACAAGCGCGCCA  
ATATCCCTCATACACCGCAGACAGCTTCGGAATGTCGTTTAGCCGCACGTTTTCTGTTGA  
TTTGGTGGATGGTCGATTGGACGGGCCATAATCGATAAGTTCTTGCGCAATGGCTTTGA  
TGAAGCGTCCGTCCGAAGTGCCGCGGTGGTGGACAATTCGGCTCAATGCCGCAGGTTT  
15 CGGCAATGGCTCGCGGTGCCACGTCCGTGAGTTTGCCGCTTGGGTGAGAAAGGGCTGCC  
CCGAACACGACCACTGCAAATCGTATTGCACGCCGTGTTTGTCCAAAATGGCGTGGACGC  
GTTGTTTCAGCCCTGCTTCGGTGGACTCGGTGGAGAAGCGGAAATGAATTTGACGTTCA  
GCTCGCCCGGAATGACGTTGGTCGCGCTGTGCCGCCGTTGATATTGGAATTTGAAAGC  
TGGTTGGCGGGAAATATTCGTTGCCTTCATCCAGACTTCTGCGTCAGCTCTAACAGG  
20 CCGGGGCAAAAGTATGCACGGGATTGATTGCCAAATGCGGATAGGCAATATGGCCTTGCT  
TGCTTTGACGGTCAGGTTGCCCGACAGCGAGCCGCGCCGACCGTTTTTAATCATATCGC  
CCAATTTGTCCACGGCGGTTCGTTGCCGACGATGCAGTAGTCGATAAGCTCGTCGCGCG  
CTTTCAATACATCGACGACTTTGGTCGTGCCGTCCAACGCGTCGCCCTCTTCGTGGAAG  
TAATCAGAAGCGCAATGCTGCCTTGGTGGTTGGGATGTTTGGCAACGAAGCGTTCGCAGG  
25 CGGTAACGAAACAGGCAATGCTGGTTTTTCATGTCTGCCGCGCCGCGCCCGTATAATCTTC  
CGTCGCGCTCGGCCGTTTCGAACGGGGGCGAATCCATTTTTTCGACAGGACCTGTGCGTA  
CAACGTCGCTATGCCCTGCAAAACAGACGACGGGAGCTTTCGTGCCGCGTCGCAACCAGA  
TGTTTTTGGTGTGCGCGAAATGGAGTTCTTCAGCCGCAAAACCGATTTTGTGACGGCGTT  
CGGCAAGGAGTTTTTTGGCAATCCCTGTCTCAGGGGTAACGGATGGTCGGGAAATCAGCT  
30 CTTTGGCAAGCTCTAGGGATTGAGTTTCGGTCATATTTGTTCACTTTTGAAATTAGACCG  
TCTGAAACGTTCTGAATGTGATTTTCAGACGGCATTAGGTAGGTTGGCATAACGGGGTG  
GGTATTTTACCCATCAGTCTTCTGAATCATTTGCCGTGGCAGGCTTCGTAAAGCGGCAGC  
AAATCTTCCACCGTTTTCCGCTATCCATTTCCGCGACATCCTGCCTGCCCAAATCGTCGCGT  
TCGATGTGTTTGCCGATGCAGAAAAGTCTTCGTGCTTTTGCAACTTTCGGTCGGACTCG  
35 TTTTGTGCGCGACGGTTCGGTAGTCTGTCGTTTCGCTTTCGCGACCGTGCCACATATCG  
AAAGAAGCGTATTTTTTCGGTATCAAAATATCCAACCGGTTGTAATCAGGCAGCGCG  
ATGGGGGAAACATCGGCTTTATAGCAGTGCCAATCCAAGCTGACGCTCAGACGGCGCGCG  
TTGAGCAGTATCGACAAAATCGCTGCGGAATTTTTATATTGTTGTTGTTGAAGTAGGCA  
AAGAAATGGGCGCGAACCTGCCAGCCGTTACACGACGTTTCGATGTGCGGCGCGCAAC  
40 GCGCACCCAATTCGGCGGCAACCTGCTGAATCAGCTGCTGCCATATCTGCCAGTTTTCT  
TTATAGTCAGCCTTGATTTGCGGAATGCTTTCAGGCTGGTATTTTTTAAGCTGGGAAAT  
TGGAAAAACGGGATATTGAACAAATCGCAACTTTTCGGGGTCAGCATAATATATCCTTGA  
GACGATTGTTTCAGACGGCATTATTTGCGCGCGCGCGCCGATAATTTCCCGGATTTCG  
GTCAGTTTTTCTTTTGGGATAAAGGTGTTGCCATATCAAACAGCGGCTCTCAATCGCC  
45 AAATGAACATCATATCCCGCCACAAAACGTTTTGAACGCTTCTCATCGGGGACATAAGCG  
TTGTCTGCTTCGAGTTTGGCAAATTCGGCGGAAACAGCCGCCAGTTGTCTGTCAGCCCG  
ATATGTTGGCGCAAAAGCTCGTCCACGCTTCTTGGGCTTGCGGCGCATATTGCAGCAGC  
AGCGGGAAGAAGTTTTCTTCTTCGTCTTCATGGTGCAGCGGCGCGCAACGTTGAAATAC  
TGGGCGATTTGGCGGATGGTTTGCAAAACAATCTGATTGCAGCCGTTTTTCGGCGATATAG  
50 TCCGACAGCATGGCGACTTGTCGCGCAAAACGGCGCACTTTGCCGTGGCAGGCATACAGC  
ATTTCAATCGGTTCCGCAAAAGGTAACGCTTTTGGTTTCAAACGGATTTCATGTTTTCTGTT  
TCAACGGGCATTTTTAAGCAGTCATTTTATAATAAAACAGCCTGCACAAAGCAGGCTGT  
CCGTCTTTTGAAGCTTTAAGCGGATTAATCGACCAAAAGTCACTTTGCCGTTTCATCAAAGC  
ACCGTGACCTGGGAAGGTACAAGCGAATTTATATTGCGCGTCGGCCAATTTAGCAGGATC  
55 CAGAGTCAGGGAAGCTTCTTCGCGCGCGCGATCAGTTTGGTATGGGCAACAACGCGTGC  
ATCATCAGTTTTGACATAGTCGGTATCGGCAGCACCTACGCCGTCTTTAAATACGCCGTC  
CATGTCTTCAGCTTTGGCAATCACAGATTGTGACCCATGCTGGCTTTGGGTTGCGTACC

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GGTATGTTTCAGAGTGATGGTGAACCTCTTTACATGCTTTGCTGACTTGGATGTCTTTGGT  
 GTTGAACATGCATATTGTCGTTGGATTTCAGACAGTTGCCGCACAGTTGCCGGCAGCAGGGGC  
 TTCGGCAGCATCTGCAGGAGCAGCTTCGGCGGCAGGCGCTTCGGAAGCGGGTGCTTCAGC  
 AGCAGGAGTTGCCTCGGCAGCAGGCGCGGCAGGTTCTTGAGAGCAGGCAGCCAAACCGAT  
 5 AACGGCGGCAGG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 86>:

**gnm\_86**

CCGCAATATTCGTGAAACGTCCGTCCGCATCGATGATGTGAAAAACCCCCGCTTTTGCT  
 10 GGGTTTGTGTTTTTGGGTGGTTTTCTGGCACGGCTATCGTCAGAATCGGGGTGCAGGTTTC  
 GGATTCCGATTTCAGATTTCAGATTTCAGATTTCAGATTTCAGGTTTGTGTCCCATTGC  
 CGCGCTTTATAGTGGATTAAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTACAA  
 ATAGTACGGAACCGATTCACTTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCT  
 AAGGTGAGGCAACGCTGTACTGGTTTAAATTTAATCCACTATATCGGTTGAAACTCTGAT  
 15 TTTAAGGCGGTAGGATGTGGGTTTGGCCATAGAAAGGGAATCCTTTCTGTATCAAGCCCT  
 GAAAGGGATAATTCATACAAATTCACGCCTTTCCCCCTCATTGGGAAATGGATGGAATCG  
 TGCCAGATGTGTGCGGCACTGTATGCCGGATATGGTTTTATCATCAGCCCTTTTCGGTTG  
 AAACCCCGTCAGTTGCAGCGATTGAGCCTAATCGGTGGCGGAAGTTGCCGCTTTGCATTTC  
 GGGCGGCGTGCAGTGCCGTGCTTTGATATGCCGTTTGTGTGTTGAAACAGGGTGGTCGG  
 20 TGCATACGGGTACGGTATGGCCAAAGCTAAAAGTGAAATACGCTGAAACACTGAATGAGC  
 CGCTTTATTGTTTGTACGGCCTTTGCTGCCTTGCTATGATTAAATTTGGATTTCGCCCGCC  
 GGATATTTTGGGATATGAAAGAATTTGACTTCATCAAACGGTATTTGCAAACAGGCACGG  
 ATAATGATGTCGTATTGGGCATAGGCGACGATGCCGCGATTGTCCGCCCGCGTGAAGGCT  
 TCGATTTGTGTTTCAGTGCGGATATGCTTTTGAAGGACAGGCATTTTTTTCAGATGTCA  
 25 AACCTGAAGACTTGGCTTGGAAGGTTTTGGCCGTCAATATTTTCAGATATGGCGGCGATGG  
 GTGCGATACCGCGTTGGGTGTTGCTGAGCGCGGCTTTGCCCGAATTGGATGAGGTATGGC  
 TGAACCGGTTTTGCGGCAGCTTTTTCGGTTTGGCAAAAAAGTTTGGCGTAACGTTAATCG  
 GCGGCGATACGACCAAGGGCGATATGGCGTTCAATGTAACCATATTCGGCGAATTGCCGA  
 AGGGTAGGGCGTTGCGGCGTGATGCGGCGGTTGCGGGCGACGATATTTGGGTGTCGGGGC  
 30 GTATCGGTATGGCGGCGGCGGCTTTGAACTGCCGTCTGAAACGGTGTGTGTTGCCAGATG  
 AAGTGTTTGCCGAATGCGAACAAAAGCTGCTCCATCCTGAACCAAGGGTTGGGCTGGGGC  
 TTGCGCTGTTGCCGTTTGGCAGGGCGGCGCAGGATGTTTCAGACGGCCTCGCGCAAGATT  
 TGGGGCATATCCTGACCGCTTCTGCAAGGGTGCGGAAATTTGGGCGGATTCGCTGCCGT  
 CTTTATCCGTATTGAAAGATATTTTGGCCCGAGCGCAATGGCTGTCTTATACCTTTGGCGG  
 35 GCGGCGACGATTACGAGCTGGTGTTTACCGCGCGGAAAGTTGCCGCAGCCGCGTATTTG  
 ATGCGGCGGAACGGTGCGCGTGCCGGTAACGCGCATCGGCAAAATCAACGGAGGATGCC  
 GTCTGAAGGTTTTAGATGC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 87>:

**gnm\_87**

CCTAGTTTCTACAGCGGCCTGTATGTTGGCAATTCAGCAGCTTCTTCTGTATCTGCTGTA  
 CAAATTTAATGAGGGAATAAATGACCAACAGCTGAAATTAAGCGCATTATTGCTTGCA  
 TTGCTCGCTTCCGGCACTGCTGTTGCGGGCGAGGCGTCCGTTTCAGGGTTACACCGTAAGC  
 45 GGCCAGTCGAACGAAATCGTACGCAACAACCTATGGCGAATGCTGGAACCAACGCTACTTT  
 GATAAAGCAAGCCAAGGTGCGGTAGAAATGCGGCGATGCGGTTGCTGCCCCGAACCCGAG  
 CCAGAACCCGAACCCGACCCGCGCTGTCTGTTGTTGAGCAGGCTCCGCAATATGTT  
 GATGAAACCATTTCCCTGTCTGCCAAAACCTGTTCCGTTTCGATAAGGATTCAATTGCGC  
 GCCGAAGCTCAAGACAACCTGAAAGTATTGGCGCAACGCCTGAGTCGAACCAATGTCCAA  
 TCTGTCCGCGTCGAAGGCCATACCGACTTTATGGGTTCTGACAAATACAATCAGGCCCTG  
 50 TCAGAACGCCGCGCATACGTAGTGCCAAACAACCTGGTCAGCAACGGCGTACCTGTTTCT

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AGAATTTCTGCTGTGGCTTGGGCGAATCTCAAGCGCAAATGACTCAAGTTTGTGAAGCC  
 GAAGTTGCCAACTGGGTGCGAAAGTCTCTAAAGCCAAAAACGTGAGGCTCTGATTGCA  
 TGTATCGAACCTGACCGCCGTGTGGATGTGAAAATCCGCAGCATCGTAACCCGTCAGGTT  
 GT

5

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 88>:

**gnm\_88**

10 GCCGATTTGGACGCGCTCGAGCATAATGTTGCCCAATTTTGGCGAATATCAGGAAGCT  
 GCGCACATC<sub>s</sub>TTTCTGCCATGCGCCATCAGGCGGCAGAGCGTTTGAGCGGCGAAACGACC  
 GAGCATATGCAACACCTTGCCATGAAAGGCGCGCGTTTCGACATCGTCCTGTTGCCTTCG  
 TCGCCGACGGCAGCGGTTTGGAGCAGGTTCAATTTCAAGTTGCCGCCAACAAAGGCAAT  
 CCGCCCCGTCTGCTGAATAAAGTTGCCTCCGGCGGCGAATTGGCGCGTATCAGCCTTGCC  
 TTACAGGTTGTTGCCAGCCAATATACCCAAGTTCCACCCCTGATTTTTGATGAGGTCGAT  
 ACCGGTATTGGAGGGGGAGTGGCTGAAATGGTCGGCAAGGCATTACGTGCGTTGGGCAGA  
 15 AAACATCAGGTGCTTGCCGTTACCCACCTTCCCCAAGTCGCATCCTGCGGAGAAAACCAC  
 TGGCGGGTGCACAAGCACAGCGAGGGAGAGCAAACCGTCAGCGAAATCAGTATATTGGAT  
 GAAATCCAACGGATCGAAGAGGTTGCCCGTATGTTGGGCGGAGAAGTCATTACCGATACG  
 ACGCGGCAACATGCGGCAGAATTGCTGCAACTTGCGTCGAAAAATAGTTTTATTTTAAAT  
 CAATCAGTTAAAAAATAACTAAAAATAAAAGTCTAAACAATAGACAGAACTCAGATAAA  
 20 TCCGTATTATCAGCCTTTCTTAATCACTTGAACAAGTGATTGTGCTGCACCCGTAGCTCA  
 GTTGGATAGAGTATCTGGCTACGAACAGAGGGTCGGGCGTTTGAATCGCTCCGGGTGCG  
 CCAGTAAGAAAAATACAATATGCGCCCATCGTCTAGCGGTTAGGACATCGCCCTTTCACGG  
 CGGTAACCGGGGTTTCGATTCCCCGTGGGCGTGCCAATTCAAAATGCCTCCGATTATATCG  
 GAGGCATTTCTCATTTCTCATTTCTCATTTCTCATACTGAGACCTTTGCAATAACATAGG  
 25 TTACTAAAATTTTATGCTCAATCTCATTTTCAAATGCAAACTTTTCTGATTTTTCCTA  
 CTTTTTGCTCAATATTAGGAAGGTTTTAGGCAATTGAAAATTTTTTGGCGCATTTTATG  
 CGTCAAATTTCTGTTAACAGACTATTTTTGCAAAGGTCTCGGATTAACAAAAATCAGGACA  
 AGGCGATGAAGCCGCAGACAGTACAAATAGTACGGAACCGATTCACTTGGTGCTTCAGCA  
 CCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACGCCGTACTGGTTTTTGTAAAT  
 30 CCACTATATTGAGTCCTCGAGAAGGGAAATAAAAAATTAACATCCTTATATATTGAGTTCC  
 TGAGAAGGGAAGATTAACAAAAATTAACGCCCTTTACTTCATAACAATCAACAGGGCTTTT  
 TCATTCTCTCTTATCTAACAGGGGTACAGAAACCGAAACGGCTGGCAGGGTTAAGGAA  
 GTCTTCGAATGTTACGGAACATTCATCTTGGACAGCAAAGGCAATTTGTTAGGCATTCCT  
 TACTCCTTATTTTGGGAAGAAACGTTATGGGTGTTTTCGATATTTTACCGTCAGGATTG  
 35 GTATGTTTATTTGAATATGATTTTCTGTGGTCCGGACGGCATGCGGCAAAGACTTAAGGG  
 GTTAGATCCTTCCTTCTGACGATGGCGCGGATGATGGTGCGGTTGGGGTGTAGGGCGTGG  
 CGCAGGCGTTGTGAAAAGGGATGGGGCAAGCCTAGGATTTGGGCTGCAATGGCGGCGGCG  
 CAGATGGGGGCGGTGGCGAGTCCGCGGGTGCCGTGCGCGGTGTTGACGTAGGCATTAGGC  
 AGGTATGGGCATGGGGTGTGATGCGGTAGTTTTTGTCCAGCGCAGTTTGGTGTAGGTC  
 40 TGCCGCATGGCGGCAATGTGCGCGAGTGCGCCGACTAGGGGAAGGTGGTCGGGCTGTGCG  
 CAGCGTATGGCGGCGTGCCCTTGGTGTTTTTGGGGGTTTGGGTTGGCGGCAACAATGAT  
 TCGGAAAGGGCGGGGTTAAGGTGTGCCAATGCTTGGCGGTTTGAAGGCTTCTTCGGCTTCG  
 TTCCATCCGGTATGGCTGCTGTGGAATAAACTCGCGCCGTAGCAGTGCAGTCCGTGC  
 CACGACGGGCTGATGTAGCTTTTCGCCTGAAACGGCGCAACGCAGTTGTTTCGAAAAACGGG  
 45 GTGGACGGTGTGAGGCCGTTTGTCCGCGTATTTGCCTGAGAGGCAGGGCGGCGAGGTTG  
 GTTTCGGGTAGGTAGGGGCTGTTTCGCACCGGTGCAGTAGATGATGTGTGTGGCGGTAAAT  
 GTGCCGTTTGGCGTGCTTGCAATCCACTTTTCCCGTCGTGGGAAATGTCGGTCAAGGGT  
 GTGTCTTCTGTAGTCCAATGAGCGGATGGTTGAGGAGGGTGCAGCAATGCGGGTGGA  
 TTGAGCCATACGCCGTGTTGCCAGTAGAGTCCGCATGAAGGGTGGTCGTATGGGACGGAC  
 50 AGTGGGATACCGGCGATTTTTTCGGCTTCTGCAGATGTGATGCTGCGGTAGAGGTGGTTA  
 TGGTGTTTTTGCAAACCAATTCGTGATTGCGTGTGTGTTTCGGTGCAGGCTGTAATTGAGG  
 TGGATGATGCCGTTGCCGCCCCAGGTTTCGGATTCGGGCAGGATGTGTCCGAGCAGGCGT  
 TTGGTGTAGCCGTAGCCGCAAGCAAAGTTCCGGTCTGTTCCGGTGTGTCGGGCGAGATT

TTGGCGTAGAGCAGCCCTTGGCGGTTGCCGCTGGCGGCTTGGGCGGCTTTTCGGGCTTCC  
 AATACGGTAACGGAAATGCCGTGTGATGCTAAGGCGTGGGCGGTTGCCGCGCCGATATG  
 CCCGCGCCGATAACGAGGATGTGTTCCGGTTTTTGCCGTTCCGATGTTTGTGGAAGTGCA  
 AACCAGGGTTTGTGCGGCTTGCTTTCCGGTTTTCGGGATGGCTTCGGTCTGCCAGGAAATG  
 5 TGGTGGAAATGTTTCGTGCAGGTGGTGGGTGCGTGAAGGGGGAACCAGCCAGAAGCGGACA  
 TCGGGCAGGATGTGTTTCGATGAGGTTGATGCTGTGAACTGGAGGCACTGCATTGCCTGA  
 TCCAAACGGTGCTTCAGACGGCATTCCGCGTCCGAAGCATCTTGTGCGGTTTGAAATCG  
 GGAATCTGATTATCGGGGAGGCAGATAATCAGGTTGAGCGGGGTGCGTGTTCGGGATG  
 GCTTGGTCGAGTGTGCGGATGTGCGGAATGCCGTCCCATACGAGATTGTCCATATCAATG  
 10 CCGTTTTAAAGTGTGGGTTTGAATATCGGTATCGGGATAAAGCTGTTAAATACGCGCCGT  
 TTGAAGGCACGCCTGCGCCTGCCGATATTGTATGCCGAACCGAGGTGTTTTTGAATAA  
 TATTCCTGTTGAAATCCGTTTGTGAAAAACCGTACCGTGTGGTTTTGACTTATGGGGA  
 CGAACCTAAAAATCTGCCTGCCGAATTTTTACGCGTCTATTCCGCCGAGTGCGGAAGTGCG  
 CGGACACGGCGTGGGACAGGATGTTTTGCAGACCGGCAAGGCGGATGTCCAAATCGCGGA  
 15 TTTGCAGCCTGTCCGACAGTACGCGCTGAAATCAGTTTTTCAGACGGGCACGACAGCGG  
 TCTTTACGATTGGGCGTATCTGCACAGACTGGCATAACGATACGATGCGATGTGGCAGGA  
 ATATTTGGACAAATTGGCGGCGGGCGCGTCCGTTTTGAAGAGAAATAAGACCGGTG  
 GGATGGTAATCTGACGGGCAAAGGTATCAGAGAGGTGGTTAGAATATGGGCGGACAGAAA  
 ACGCATTTCGGATTACGTACGGTCAACGAAGATGAAAAAGCCGGCAAAGTGGCGGAAGTG  
 20 TTCCACTCCGTCCGCAAAAACCTACGACATTATGAACGATGTGATGTGCGCAGGGCTGCAC  
 AGGGTGTGGAAGCATTTACCATCAACACGGCGCACCTGAAAAAGGCGATAAAGTGTG  
 GACATTGCGGGCGGTACGGGCGATTTGTGCGCGGTTGGGCGAAACGGGTCCGCAAGGAA  
 GCGGAGGTTTGGCTGACCGATATTAATTCCTCTATGCTGACCGTCCGGCGCGACCGTCTG  
 TTGAACGAAGGCATGATTTTGCCGATCGCTTCCGATGCGGAAAACTGCCTTTCCCC  
 25 GACAATTATTTCAACTTGGTTTCCGTGGCGTTCGGCTTGCAGAACATGACGCATAAAGAT  
 GCCGCGCTGAAAGAGATGTACCGTGTGTTGAAACCGGGCGGCAGTTGCTGGTGTGGAG  
 TTTTCCAAATCTACAAACCTTTGGAAGGCGCGTATGATTTCTATTTCGTTCAAGCTGCTG  
 CCGGTGATGGGCAAGGCTGATTGCGAAAGATGCGGAGAGTTACCAGTATCTTGCCGAATCC  
 ATCCGTATGCACCCCGATCAGGAACTTTGAAACAGATGATGCTGGATGCGGGCTTCGAC  
 30 AGCGTGGATTATCACAAATATGAGTGCGGGCATCGTCCGCTGCATAAGGGCGTGAAATTT  
 TAAACGGACTGGCTGTGCAGCCG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 89>:

#### gnm\_89

35 GTAGAATTGCTAAGGAATCCTCAGATGCTTCTAACACTTTCTTTGCGTGATTTTGTGAT  
 TGTGAAAAATCTGAATCTGGATTTTCAAAGCGGCTTTACCGTATTGACCGGAGAACTGG  
 CGCGGGCAAGTCCATTACTTTGGATGCGATTGGTCTGCTGTTGGGCGATAAAGCCGATTA  
 CAGCCAAAGTCCGACGCGGCGAAAAGAAGCGCAGTTGTGCGCGTTGTTTGATATTTCCCA  
 TTTACCTGTTTTAAAAGCAGAATTGTATGAACAGGGGCTTTTAAACGACGGAGAAGAAGA  
 40 ACTCAGTATCCGCCGCATTATCGATGCCAAAGGCAAAGCCGACGCTTTATCAACAATCA  
 GGCCGCTACCTTGGGCGCAACTCAAAGCCGTCGGTAGCCAGCTTATCGACATCCACGGGCA  
 AAACGCCCCATCATTTGCTTAATCAGGAAGCCGCCAGCGCAATTGTTGGACGCATTTGC  
 GGGTAGCAGGGAGCAGGCGGAAACCGTCAGGCAGCTTTATCAAAATTTGGGCCAATGCGAA  
 AAAAGCCCTCCAAGAGGCGCAGGAACACGCCGATGCCGTGATTATCGAGCGGGAGCGTCT  
 45 GGAATGGCAGTTTAAACGAATTGAATCAGTTGGACATTAAACAAGGCGAGTGGGAAGCCCT  
 CAGCCAAAGCCACGACGCCCTTGCCATTCTGCCGAGCTGTTGCAGGCTGCCGAAGAAGT  
 CGGAAGCAAGATTGACGGCGACAACGGCATCCAACGCCATATCTATCAATGTCAAAACT  
 ATTGGCCAATCTGCAAAACATCGAGCCGCGCTTTGCCGAGAGCTGAATATGTTGGCAAG  
 CATCGAAGCCGAATTGGGCGAAATCAGTGCCAATATGCGCGATGTGGCAGGTGCGAGCGA  
 50 CATCAATCCCAACGAATTGCCGACAAGAGCAGCGCATGGGCGAGCTGATGGGGATGGC  
 GCGGAAATACCGGATCGAGCCTGAAGAGTTGCCTGCCAAGTTGGCAGAAATCG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 90>:

**GNMCD84F gnm\_90**

5 TCGACTCTAGAGGATCCCCGGGCGTATTCGGCGCGTGGCTTGCCACACCCAGCACCATT  
GGCTTCAAAGCCAAAAATCAACACACCGTCAAAAATGCCGTCCGAACCCGTTTTTCAGAC  
GGCATTTC AATTTGCCTAGTATAATGGCGCATTTTTCCAACAAGGAACCTACCATGCTGA  
CCTCGGAACAAGTAAAAGCCATGATTGAAGGCGTGGCAAAATGCGAACATATCGAAGTAG  
AAGGCGACGGACACCATTTTTTCGCCGTCATCGTTTCATCAGAATTTGAAGGCAAGGCAC  
10 GCCTCGCGCGCCACCGCCTGATTAAAGACGGACTCAAAGCCCCAACTGGAAAGTAACGAAC  
TGCACGCACTTTCCATTTTCGGTTGCCGCCACTCCGGCGGAATGGGCAGCCAAAGCACAA  
AATCGCCACACAAAAATGCCGTCTGAAACCATTTCGTTTCAGA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 91>:

**GNMCD96F gnm\_91**

15 TTGCATGCCTGCAGGTCGACTCTAGAGGATCCCCGGCGGATTTTTGCCGCGTGTTCCGCG  
TCGGCGTGTCGTTTTAAGGCTTCGAGGGCGTTTGCGGCGGCTTTGAGGCGGCTGCGTGTT  
TCGCCCCAGACCGTCCA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 92>:

20 **GNMCE20F gnm\_92**

CCGGGACCTTTTTTCTCCAGAAAGCCGGCAATGGGGCTGTCCGGCCGGGTGGGCATCAGC  
AGCTCGATCAAGGTGTCGCCCACCACGAAGGCGCGACCCGACACCCCTGAGTTCCCACG  
TCTTCGTGCGGGGCCCTTCGGGGCGCAGGCCGAGCGGACATAAGGTGCGGCGCCCTGATCC  
25 AGATCGGGGGTGGCGATGGCGACGTGGTCGAGGAGCATGGCCTCAGCTTATACCTGCTGA  
CCAGGACGCGGCACACAAAAATGAACCGGGAACAGGTTTTTCTGGACGCCGGCCCCGCT  
CGTTACACTCTGAAGTGTGACCCTGACCGCCCTGCTCGCCCTGCTGCTCTCGTACCTCAT  
CGGCGCTATTCCGGCGGCGCGGTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 93>:

30 **gnm\_93**

CTTCGTCAACGAAAGCGCGCAAAACATCCGCCGCATCCTTGCCGAAGTGCCGATACACAT  
CATCCAATTCCACGGCGACGAAGACGACGCATTCTGCCGCCAGTTCCACCGCCCTATAT  
CAAAGCCATTTCGTGTTTCAGACGGCATCAGACATCCGAAACGCCGCCACGCGCTTCCCCGA  
CGCTCAGGCACTGCTGTTTCGATGCCTACCATCCTTCGGAATACGGCGGCACCGGAAACCG  
35 CTTTCGACTGGACGCTGCTGGCGGAATATTTCGGGCAAACCGTGGGTGCTTGCCGCGGGCT  
GACCCCTGAAAACGTCCGCGAAGCCGTCCGCATCACCGGAGCGGAATCGGTTCGATGTATC  
CGGCGGTGTGGAAGCGTCTAAAGGCAAAAAAGATGCCGCCAAAGTCGCCGCTTTATCGC  
AACCGCCAACCGCCTATCCCGTTAAAGCAACAAAAATTGCCGCCGGAATGACTTATAGTG  
GATTAACAAAAACAGTACGGCGTTGCCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAG  
40 GTGCTGAAGACCAAGTGAATCGGTTCCGTACTATTTGTAAGTGTCTGCGGCTTCGTGCGC  
TTGTCCTGATTTTTGTAAATCCACTATAATCTAAAAATTTATGCTATTAAATCAGTAAT  
TTCTGATGAATTTTGAACCTTAATCCCGTCATTCCCGCGCAAGCGGGAATCCGGCTCGT  
TCGGTTTCGCTTGTTTAAGTTTCGGGTAACCTCCACTTCGTCAATCCCGCGCAGGCGGG

-621-

AATCCGGTTCATTGAATTTTCAGCTATTTAGAATAAATTTTGAAACTCTAATCGCGTCATT  
 CCCACGAAAGTGGGAATCCAGGACGCAAAATCTCAAGAAACCGTTTTACCTGATAAGTTT  
 CCGCACTGACAGACCTAGATTCCCGCCTGCGCGGGAATGACGAATCCATCCATACGGAAA  
 CCTGCATCCCGTCATTCCCACGAAAGTGGGAATCCGGTTCGTTTCGGTTTCGCTTGTTTA  
 5 AGTTTCGGGTAACCTCCACTTCGTCATTCCCACGAAAGTGGGAATCCAGTTTTTTGAGTT  
 TCAGTCATTTCCGATAAATTGCCTTAGCATTGAATGTCTAGATTCCCGCCTACGCGGGAA  
 TGACGGATTTTAGGTTGGGGGCATTTATTGGAAAAAGCAGAAAACCAAAACAGCAACCT  
 GAAATTCGTCATTCCCGCGCAGGCGGGAATCCAATGCGTTGAGTTTCAGCTATTTAGAAT  
 10 AAATTTTGAACTCTAATCGCGTCATTCCCACGAAAGTGGGAATCTAGAAATTTAATGTT  
 GCGGCACTAGCCAAAAAACCAGAACCGGACTAGATTCCCGCCTGCGCGGGAATGA  
 CGGCTGCAGATGCCCGACGGTCTTTATAGTGGATTGAGACCTTTGCAATAACATAGGTTA  
 CTAATAATTTTATGCTCAATCTCATTTCAAAATGCAAACTTTTCTGATTTTCTCTACTT  
 TTTGCTCAATATTAGGAAGGTTTTAGGCAATTGAAAATTTTTTGGCGCATTTTATGCGT  
 CAAATTTTCGTTAACAGACTATTTTGCAAAGGTCTCGGATTAACAAAAATCAGGACAAGG  
 15 CGACGAAGCCGCAGACAGTACAAATAGTACGGAACCGATTCACTTGGTGCTTCAGCACCT  
 TAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACGCCGTACTGGTTTTGTAAATCCA  
 CTATAATATGCACAGATAATATCAACCCGTTTTTAACAAAGATATTCCCGGCATTTGCGT  
 AAAGTTCAGCAAGAAAACTACAAACCCAGTCGCGCAGGAAGCGGATGTCTCCGCCCAA  
 CCGGATTTGACTTTGACCCAGACCTTCAAAAATACTTTGGTATCAAACAGTTTTTCCATA  
 20 TCCAACCGCGCTTCGGTGGAATTTTCTTCAAACGTTCTCCGCCCTTACCGATTAAAATT  
 GCCTTTTGGCTTTCTTTATCGACCAAAACGGCGATATAGATGCGGTTCAAACCGTCTTCC  
 TCTTCAAACGCTCCACTTCGACGTTTCATCGCATAAGGCAATTCCTCGCCCAAGTAGCGG  
 AACAATTTTTTACGCACGATTTTCGCGCGCTGG

25 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 94>:

**gnm\_94**

TTTTCAGCTTGGTCTTAACCCGCCCTGCTTGAGTTGGGAAAGGCTTTCGACAAACACGA  
 TGCCCATCAGGTGGTCCAACCTCGTGCTGCAACGCAAAATCGCCAACAAGCCGTCCGCCTCCA  
 30 CGGTGAACTTTTCGCCTTTTTCGTTCAAAGCCTCGACGGTTCGATAATCTACATTTGCAC  
 GTAAAGTATGCAGTGGCAGCGACCTTTCAGGATACCATTCGCTACGGGCAATATCCGCAC  
 CATTTCAGACGGCCTGAAGTCATAATCTTAATGCCTTTAGCACCAAGAACGATTCGATTTT  
 GCATTGCTCGTTTCATAGCACGACGGAATTGAACGCGCTTTTCCAACCTGCTGGGCAATAC  
 CGTCAGCAATAATTTGAGCATCCAACCTCAGGACGGCGAATCTCTCAATATTTACATGAA  
 35 CAGGTACACCCATCAAGACTTGCAAGTCACGTTTCAAACCTCGATATCCTCACCTTTTT  
 TACCGATAACCAACACCCGACGAGCGGAGTGAATGGTAATGCGTGCAATTTTGCAGGGC  
 GTTCAATAACCACTCGACCAACCGAAGCATTGGCCAATTTTTCAGCAGCAATAATTGCGAA  
 CATCGATATCCTGCTTCAAACAGTAGAAAAGTCGGTGCTTTTAGCAAACCATTTTGAAG  
 CCCAGTCTTTAGTTACCGCCAGGCGAAAGCCTGTAGGGTTAATCTTTTGTCCCATAGCTT  
 40 TTCTTTAGTTACCCACTGTACATTGATATGACAAGTTTGTTTTTCGATGCGGTTACCGC  
 GACCTTTGGCGCGAGCTTGAAAACGTTTCAAGCTTGGGCCTTTGTCAACAAAGATAGTTA  
 CCACTTTTCAGTTCATCAATGTCCGCACCGTTATTGTGCTCGGCATTAGCAATAGCTGACT  
 CCAATACTTTTTTAATCAGCTCGGCACCTTTTTTAGGACTGAAAGCCAAAATATTCAAAG  
 CTTGGGCAACGTCTTTACCACGAATCAAATCAGCTACCAAACGAGCCTTTTTCAGCAGAGA  
 45 TACGGGCATTTTTATGTTGTGCATTTACTCTCATGATTCACCTTATTTCTTTTAGCCTT  
 TTTATCGGCCAAGTGGCCTTTAAAGGTACGGGTCAATGAGAATTCGCCTAATTTATGACC  
 AACCATATTGTCGCTGATAAACACAGGCACATGGGTGCGGCCGTTGTGCACAGCAATGGT  
 CAGACCTGATAAAATCAGGCAGAAATGGTAGAACGACGAGACAGGTTTTAATCGGGCGTTT  
 GTCGTTGCTTGCAGCAGCATCTACTTTTTTTCAGCAAATGCAGGTCTACATATGGGCC  
 TTTTTTCAATGAACGAGCCATACTAAATTAACCTTTATTTGAGTAACGGCGACGAACAAT  
 50 CATGTTATCCGTGCGTTTGTATTACGAGTGCAGTAGCCTTTAGCAGGAGTACCCCATGG  
 GCTGACCGGTTTCGCGGCCCTCGCCGTACGGCCTTACCACCACCATGCGGGTGATCGAC  
 AGGGTTCATGACAACACCACGTACAGTCGGACGAATACCGCGCCAACGATTGGCACCGGC  
 TTTACCGATTTTTTTTCAGGCTTTGCTCTTCGTTACCGACTTCACCGATGGTTGCACGGCA

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ATCTACGTTGATTTTACGGACTTCGCCAGAGCGCAGGCGGACTTGAGCGTACGCGCCTTC  
 TTTAGCCAGCAATACCGCAGAAGCACCAGGAGCAACGTGCAATTTGCGCACCTTTACCTGG  
 TTTTATTTTCGATACAGTGAATAGTTGTACCAACAGGAATATTGCGGATCGGCAGAGTGTT  
 5 ACCTACTTTTGATCGCAGCTTCAGCACCGGAAACCAATACTGCACCGGCTTGAATACCAG  
 AGGAGCAATAATGTAGCGACGCTCACCATCTGCATAGCACACAGTGGGATAAATGCAGT  
 ACGGTTAGGGTCATATTCGATACGCTCTACTTTTGCAGGGATACCGTCTTTGTTACGTTT  
 AAAATCTACGACGCGGTAATGATGTTTATGACCACCACCTTTATGACGGGTAGTAATATG  
 ACCATTGTTGTTACGACCGGCAGTAGAATTTTCTTTTCCAGCAGAGGTGCATAAGGTGC  
 10 ACCTTTGTACAAACCTTCTGTTACCACGCGAACCATGCCGCGACGGCTGCAGAGGTCCG  
 CTTTATTTTAAAGATTGCCATTTTGTATTCTTATCTGCAGCTGCAGCAGCGGCTTCC  
 AAATCCAACCTTTGACCGGCAGCCAAGCTTACATAAGCCTTTTAAACATCGCTGCGACGA  
 CCTAAAGTGGCAGCAAAACGTTTAACTTTACCTTTAATGGTAACAGTAGTAACGTCTGCA  
 ACTTGAACGCCGAACAGCAGCTCAACAGCCGCTTTAATTTTCAGGTTTGGTTGCATTTGCC  
 AAAACTTTAAACGTCATTTGGTTACGTTTTTTCAGCCAATACGTTGCTTTTTTTCAGAAACG  
 15 ATAGGTGCCAAAATCACTTGAGTCAAACGTTGTTGATTACATCCCATGCTCCTCTAATT  
 GTGCAACTGCATCTTTAGTGATGATTACTTTTTTGTAAACGCAGCAAGCTGTAAGGATCAA  
 CTTGTTGAGCTTCCAAAACCAACACGTTTGGCAAGTTGCGTGAAGCCAAGTAAACATTCT  
 CGTCGAGCTGTTTGGTTACAAACAACACTTGCTCCAGACCCAGATTTTTTCACTTGTTCGG  
 CAAAACCTTTGGTTTTAGGAGTTTTCGGCAGTCAACGCCTCAATCGCAAACAAACGCTCGT  
 20 CACGAGTCAATTGGGACAGAATAGTCGCCATACCGGCACGGTACATTTTGCAGTTTACTT  
 TTTGAGTGAAGTTTTTCGTGCGGTTTTGTTCGGGAACGCGCGACACCTTTACGCCACAGCG  
 GAGAAGAAGTCATACCGGAACGGGCACGGCCGCTACCTTTTTGACGCCATGGTTTTTTGG  
 TTGAGTGTTTTACTTCCGACAGGTTTTTTTGTAGCGCGGTTACCGGAGCGGGCGTTTGCCA  
 AGTAGGCATTTACCAGCTGATGAACCAACGCTTCATTGTATTCGCGGGCGAACAAGCAT  
 25 CAGAAACAGACAGACTGCCTGAACTTGTCTTTAGCGTCAATTACTTTCAATTCCATTA  
 CGCACCTACTTTTACGCTGGGACGAACTACAACATCGCTGTTGACCGCACCCGGAACAGC  
 ACCCTTAAACACAGCAGTTGGCGTTCTGCGTCAACACGGACAACCTTCCAATTTTTGAAC  
 AGTTGCTTTGGTGTTCGCGTATTGGCCGGCCATGCGTTTACCGGGGAACACGCGACCCGG  
 GTCTTGCGCCATACCGATAGAGCTGGAACACGGTGAGAACGGGAGTTACCGTGGGAAGT  
 30 ACGTTGGGCACCGAAGTTATGACGTTTAAATCGTGCCGGAGAAACCTTTACCTTTAGAGGT  
 ACCGGTTACATCGACAGTTGACCGACTTCAAACATAGAAACGGTGATTTCTGTCACCAGC  
 TTTCAATTTCAGCCAGTTTTTTCTTCACTCAAAGCAAACCTCAATCAAACCGCGACCGGCTTC  
 AACACCTGCTTTTGCAAAGTGCCCGGCTTCGGCTTTGTTGACACGATTGGCTTTTTTCTG  
 ACCAAAGGTAACTTGAACGGCAGTATAGCCGTGAGTATCTTTGGATTTTACTTGTGTAAC  
 35 GCGGTTGGCAGACATATCCAAACGGTTACCGGAACAGAAACACCCTGTTCTGTCGAACAC  
 GCGGGGTCAATTACCAACT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 95>:

#### gnm\_95

40 GGTTTTAACTGCAAAACATCGTCCGCATTCTGCGGATTCTGCCAAACGGCGAGATAGCC  
 GTAAGTATCGGCAGCCCGTGCCGCCGAGTCATCAGGCATAGTGCCGATACGGCCAGTAT  
 CTTTTTCATCATGATAAATCCCGACGGTTTCGTCCAAATTCTGTTGCATTATAAACAAAA  
 AACAGGATAAGTCCCGCCTTATCGGCTTATCCCTCCCGCAGATTGCACCGCCGGGTATG  
 GCAAACCGATTTTCAGCAGCGCAAATCCGCATACCGCCGCTTAGCGGCAAGCCGTTGTTT  
 45 TCAGACGGCATTTGCGGCCAACCTTTGCGGCGGGCGAAAAACCTTGTCTTATAATTTATCC  
 CGTTTCAAAATCAGCATACGGTCGGAATGCAAAAAATATCTTTCAATTTGTTGAAGCCT  
 GCAAACTCCCGGAAAAATAGGGAACCGCCCGCGTTTGAACGGCGCGCGCATATTCCG  
 ATGCCCTCCCCCGATACCTTCCGGCAAGCCAGAAATGCCGGCAACAACATCCATCCG  
 GCAAAAAATCCGAAACAACACACCCGGCGGCGAGGAGTCAAACCGCCCGCAAAGCATC  
 50 CGCCATCAGAAAAACAAACCGCCTCCGAGGGCTTCATCCTAAAGGGCGTATTGTTGATA  
 ATGGTTTGGGTTATAATCCCTATCGATTCTCCACGTCCGTGAGACACTTCAGCTATGGA  
 AACCCCGACCAACACCCCGCAACGCTCCCTGCGTCAAAACAGTATCTACCTGCTGCCCAA  
 TTCTTTACTATCGCCGCGCTGTTTTCCGCGTTTTACGCAATCACCCAATCCATGCACGG

ACGTTATGAAACCGCCGCCATCGCGGTATTCATCTCTATGTTGCTGGACGGTATGGACGG  
GCGCGTGGCGCGGCTGACCAACAGCCAAAGCGCGTTCGGGGAGCAGCTCGACAGCCTTGC  
CGATATGGTCAGCTTCGGCGTTGCTCCCGCTCTGATTGCCTACAAATGGCAGCTTTGGCA  
GTTCCGGCAAAATCGGTTATTCCGTCGCGCTTCATCTACTGCGCCTGCGCCGCCCTGCGCCT  
5 CGCCCTGTTCAACACACTCATCGGCAAGGTGGACAAACGCTGGTTTATCGGCGTGCCAG  
TCCGACTGCGCGCGCGCTGATTGTGCGGCTGATTTGGGTCAACCACAGCGTCGAAAAAT  
CCCCCGCGTCCACTGGTGGGCATTGGGCATCACACTGTTTGCCGGCCTGTCGATGATTGT  
CCAAATCCCTTTTTGGAGTTTAAAGAAATCAACATCCGCAGACAAGTCCCCTTTGTCGG  
AATGCTGCTTGCCGTCTTACTGCTGCTTCTGGTCACTTGGGAACCGTCGCTCGTCCTCTT  
10 CCTGTTCTTTCTCGGATACAGCCTGTCCGGCTACATTATGGCGGCACGCCGATTTTGAA  
AAAGTACAGAAAGGCGGATTAAATGTGGCATTGGGACATTATCTTAATCCTGCTTGCCGT  
AGGCAGTGCGGCAGGTTTTATTGCGCGCCTGTTCGGCGTAGGCGGCGGCACGCTGATTGT  
CCCTGTGCTTTTATGGGTGCTTGATTGTCAGGGTTTGGCACAACATCCTTACGCGCAACA  
CCTCGCCGTGCGGCACATCCTTCGCGCTCATGGTCTTCACCGCCTTTTCCAGTATGCTGGG  
15 GCAGCACAAAAACAGGCGGTGCGACTGGAAAAACCGTATTTACGATGATGCCGGGTATGAT  
ATTGCGCGTATTCACGGGCGCACTCTCCGCAAAATATATCCCCGCGTTCGGGCTTCAAAAT  
TTTCTTCATCCTGTTTTTAACCGCGTCGCATTCAAAACACTGCATACCGACCCTCAGAC  
GGCATCCCCGCCGCTGCCCCGACTGCCCCGACTGACTGCGGTTTCCACACTGTTTCGGCAC  
AATGTCGAGCTGGGTGCGCATAGGCGGCGGTTCACTTCCGTCCCCTTCTTAATCCACTG  
20 CGGCTTCCCCGCCATAAAGCCATCGGCACATCATCCGGCCTTGCCCTGGCCGATTGCACT  
CTCCGGCGCAATATCGTATCTGCTCAACGGCCTGAATATTGCAGGATTGCCCGAAGGGTC  
ACTGGGCTTCCTTTACCTGCCCCCGCTCGCGTCTCAGCGCGGCAACCATTGCCTTTGC  
CCCGCTCGGTGTCAAAACCGCCCAAACTTCTTCTGCCAACTCAAAAAATCTTCGGC  
ATTATGTTGCTTTTGATTGCCGAAAAATGCTGTACAACCTGCTTTAAACACACGAAAA  
25 AACCTTTTTACCGTTTGACACAAGCAATTAATCAGGACAAAGCTGCCAGTCTCCTGTTCC  
GACAAAAGGACAGACAACCTGACCGAGACCTTTGCAGAATATACGAAAAACGACAGATAC  
CGTCTGAAACCACATTCGACAATCGGCAGGGTTTCAGACGGCATCTGATAATTC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 96>:

30 **gnm\_96**

CCTTATTGTGGGAAGTATGCGGCGAAGAGGAATTTACCGCCGAAGCCATCGCCGAAGAAT  
ATTACGGCCATGCGCCGACCAAAACCGAGCTGGCGGCAACTTTGATTGCGCTTTACGCCG  
CGCCGATGATTTCTACAAAAAGCCAAAGGCGTGTTCAAAGCCGCGCCCGAAGAACTT  
TAAACAAGCACTTGCCGCCATCGAACGCAAAAAACAGCAAGACGCGCAAATCGACGCTT  
35 GGGCAGAAGCCTAAGGCGTGGACTCCGCCACCACTCAAAATCAGCTCTGTAAACCGGTC  
TGAGTCTTCTTTTCCCCGTACTCAATAATTTATCCGCGCCTCTTTACCACCAAATTCA  
TTTACAATTTGTAAAAATCGTGTGCGCTTGTAAGGTTGCGGCAAAATCAAAGCCTCCTGA  
TAAATATTTAATATGGCTTTATGAAATCTTGTTCTAACTGATTTTTATCCATCATTCTT  
CTTCCAATATTTAGACCGGATTATTCTTACCCAGAATTTCTTTCTCATCCGCTCCCGT  
40 CTGATCACCTACCGAATCAGGTGCTGTAACAGTCTGAAATCGCTTTTCAGACGACCCT  
CAGCCTTTTTCATACCCTTCGTAATAATACGACTGCTCGATACCTTTAAAGATGATTTC  
CGTTGTCCACATCGTCAGTCAGTTGTCTTTAACAGAAAGCGCAGTTCTAAATCGTTG  
ACGGGGCTGCGTTCCATCGCCTGCAAAATACAGGGTTTTACTTACATTTTGCCAGTTCACG  
ACTTTTTTCAGGTTTTTTTTTTCAGCACCAATCCAGCCAGATGCGGGTACTTCTGCCATTA  
45 CCTCCAAAAACGGATGGGCAATGTTCAATTTCAACATATTTGGCGATGATTCTTCAAAA  
GTCCGCTCGGGCATCTGCTCGATTTTAACCAAAGCCTCTTTAAATACATGGCGTTGGCA  
AAACGAAAACCGCCTTTGGAAATGTTGTCTTCCCTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 97>:



## gnm\_97

CTTGGTGTGATACCATTCGATTCCATTTCGATGATAATTCCATTTCGATTCTATGCGATGA  
TTCCATTTCCTTTCCATTAGAAGCGCGACACGGCGAAGCGGATATTTTGGTATTCCTGCCG  
GGCGAGCGCGAAATCCGCGAAACTGCCGAAGCCCTGCGCAAAATCCACGCTGCGCCGCAAC  
5 GACGAAATCCTGCCCTGTTCGCACGCCTGTTCGCACGCCGAGCAGCACAAAATCTTCCAC  
CCCTCAGGCGCGAAACGCCGCATCGTATTGGCAACCAACGTCGCCGAAACCTCGCTTACC  
GTGCCGGGCATCAAATACGTCATCGACACCGGCCCTCGCGCGTGTAAACGCTATTCCGCA  
CGGGCGAAAGTGGAGCAGCTTCATATCGAAAAAATCTCCCAAGCCGCCGCCGCCAACGA  
TCCGGCCGCTGCGGACGCGTCTCCGCAGGCGTGTGTATCCGACTGTTTTCAGAAGAAGAT  
10 TTTAACAGCCGCCCGGAATTTACCGACCCCGAAATCGTCCGCAGCAACCTCGCCGCCGTC  
ATCCTGCGCATGGCAGCATTGAAACTCGGCGATGTGGCGGCATTCCCGTTTTTAGAAATG  
CCCGATTACGGTATATCAATGACGGTTTTTCAGGTGTTGTTGGAGTTGGGGGCGGTGGAG  
GCCGTCTGAAACAGGCAGACATAAAAGAAAATCCGCGTAGAGTGATGTAACCTTACCCT  
TGCTTTAATAAGTAGAAAATGGTGGGTTTACGTCCCCCCTGCGGCTACTAAAAAATAT  
15 AAGAGTAAACAACCTTTTTGAAAGAAAAATGTATGGACGAAATTCAAATACCCAAAAAG  
TGGAATTACAAACCAAAGTAGAAAATGAAAGATTGTTTTATCGAAAGGTTCTACCACGA  
TTATTGTTGGTGCTAATGGCACAGGGGAAAACAAGATTAGCTGTTTATATTGAAGAACAAT  
TAAAGGAAAAAGCACACAGAATTTCCGCTCATAGAGCATTAAAATTAACCCCTAATGTCA  
ATAAAATACCAGAAAAGAGTGCCAAAACATATCTATCTTATGGTCAGAACTGGGATGGAA  
20 TCGATGTATCAAATAGAAAAATATAGATGGGATAATAAAGTCAATATACTCATTTACTCA  
ACGATTTTGATTGGTTATTACAATATTTATTCGCTCAACAAAATAATATTGCGGTAGCAA  
ATAATCAAAAGCTCAACCGTAATGAAAAGTAACCAATTCAAAAACAAAGCTAGATATTT  
TGCAAGAAGCATGGGAAACATTATTACCACACAGAAAATTACATATTACAGCAGATGATA  
TTCAAGTCTCTGCTGTAGATAATGAGGAATTGTATTCTGCCTCAAATATGAGTGATGGAG  
25 AGCGAGCACTTTCTATATTCTTGGACAAGTTTTGTCTAGTAGATGACGGTTCTGTCTTAA  
TTTTTGATGAGCCTGAATTACATATTCTATAATCAATTATTTCAAATCTATGGGATAAAA  
TTGAAGAATTACGACCTGATTGTTTCAATTTCTAATCATTACACAGCATATTGAATTTGCTG  
CAACTCGAGTAGCTAAAAAATATGTTATCAGAAATTATTATCCGACCCCTGCTTGGGATA  
TTTCTGAAGTTCCTGAAAGTAATTTTGATGAAGAAAACAATAACGATGATTTTAGGTAGCC  
30 GTAAGCCAATATTATTTGTTGAGGGCAACAATAATAGTTTAGATATTGCTACTTACCGCT  
ATTGTTATCCTGATTGGACCATCATACCCAAAGGGGCATGCAAAGATGTCATTCAATCAG  
TATCATCGCTGAAAAATTAAGTAATGAAATGCCATTACTAACTTAAATGTTTCAAGTA  
TTGTGATTTAGATAGTAGGGATGAAAGAGAAATTGAACAATTAAATAATTTGGGTATTT  
ACATTTTACCTGTATCCGAAATTGAAAATCTTTTTAGCTTAACTGATGTAGCAAAAGAGA  
35 TATTGAACTAAATCAATATTAGATGAAGAATTACTCAATAAACTTAATGGATTTAAAT  
CCGAACCTAATTAAATATATAGATAATGAATTAAAAGACGATAAATTAGACGAATTTGTTG  
TAAACAGGTTTCGACGTAAATTTGATAATTATTTAAAAAATATTGATTTATCCTCCAAA  
TAACAAGTACTGATATGAAAAATCATTACTTAATGAAATTTCTACTTTAACAGAACAGA  
AAATTGAAACATGGATTTAGAAATTAATAATGAAATTCAAAGATGTATTGAACAGCAAG  
40 ATTTGGATAAATTACTTACTATATATGATAATAAAGGACTCTTGGCTAAATCAGCTTGTG  
TTTTTAAAGGAATGCGTAACAAACATGAATTTGAAAGCTGGATAATGAGAACATTAAAG  
GAAGGAATAAAGATTTTATTGATGCAATCAGACAGAACTTCCAATTCTGGATTAAATAA  
AACCATCTGAAAAATTTACCTTCAGATACAGATATATTTATGAAAAATCATCAAATACA  
CTCTCTTTCCCTACTTCGAGTAGCCTGAAACCTTGCGCAGACAAACAAGGCCTGTCTGAA  
45 GACCGCAGCCAAATACCGCCTGACCAAACTCGGCGAACAATGGCGCACCTGCCTATCGAC  
CCGAAAATTGCGCGTATTTTGTAGTATTATTCGGTTTTTAAAAATGCCCGATTGCGCGT  
ATATCAATGACGGTTTTTCAGGTATTGCTGGAATTGGGGGCGGTGGAGGCCGTCTGAAAT  
AAAATCTTTCTTTATAAAAAGGCAGGCCATGTTTCATTTTCAGACGGCCTAAATCATTGA  
GAACTAAAACTATTAAAAAGGGAAATATTGGGTTTTAAACTCAATCGGTAAATTTTTA  
50 TTGTGAAATATTAATGATGAAAAATCTTTCCTTACGCTTGTCTGTATTCTGCTTTACT  
TACCGCCAGCGAAATTGCCTATCGCTTTGTATTGGGATTGAAACCTTACCGGCCGGCAAA  
AATTGCGGAAACGTTTGCCTGACATTTGTGATTGCTGCGCTGTATCTGTTGCGCGTTA  
TAAGGTGACGCGTTTGTGATTGCGGTGTTTTTGCCTTCAGCATTATTGCCAACAATGT  
GCATTACGCGGTTTATCAAAGCTGGATGACGGGCATCAATTATTGGCTGATGCTGAAAGA  
55 GGTACCGAAGTCGGCAGCGCGGGTGCCTCGATGTTGGATAAGTTGTGGCTGCCTGTGTT  
GTGGGGCGTGTTGGAAGTCATGTTGTTTTGCAGCCTTGCCAAGTTCCGCCGTAAGACGCA

TTTTTCTGCCGATATACTGTTTGCCCTTCCTAATGCTGATGATTTTCGTGCGTTTCGTTCGA  
CACGAAACAAGAGCACGGTATTTTCGCCCCAACCGACATACAGCCGCATCAAAGCCAATTA  
TTTCAGCTTCGGTTATTTGTGCGACGCGTGTGCGGTATCAGTTGTTTGATTAAAGCAG  
GATTCCCGCCTTTAAGCAGCCTGCTCCAAGCAAAATCGGGCAGGGCAGTGTTCAAAATAT  
5 CGTCCTGATTATGGGCGAAAGCGAAAGCGCGCGCATTTGAAGCTGTTTGGCTACGGACG  
CGAAACTTCGCCGTTTTTAACCCGGCTGTGCGAAGCCGATTTTAAGCCGATTGTGAAACA  
AAGTTATTCCGCAGGCTTTATGACTGCAGTGTCCCTGCCAGTTTTTTCAATGCGATACC  
GCACGCCAACGGCTTGGAACAAATCAGCGGCGCGGATACCAATATGTTCGCCTCGCCAA  
10 AGAGCAGGGCTATGAAACGTATTTTTACAGCGCGCAGGCGGAAAACGAGATGGCGATTTT  
GAACTTAATCGGTAAGAAATGGATAGACCATCTGATTTCAGCCGACGCAACTTGGCTACGG  
CAACGGCGCAATATGCCCCGATGAGAAGCTGCTGCCGTTGTTTCGACAAAATCAATTTGCA  
GCAGGGCAAGCATTTTATCGTGTGTCACCAACGCGGTTTCGCACGCCCATACGGCGCAT  
GTTGCGCCTCAAGATAAAGTATTCGGCGAAGCCGATATTGTGGATAAGTACGACAACAC  
CATCCACAAAACCGACCAAATGATTCAAACCGTATTCGAGCAGCTGCAAAAGCAGCCTGA  
15 CGGCAACTGGCTGTTTGCCTATACCTCCGATCATGGCCAGTATGTTTCGCCAAGATATCTA  
CAATCAAGGCACGGTGCAGCCCGACAGCTATCTCGTGCCGCTAGTGTGTACAGCCCGGA  
TAAGGCCGTGCAACAGGCTGCCAACCAGGCTTTTGCGCCTTGCGAGATTGCCTTCCATCA  
GCAGCTTTCAACGTTCTGATTACACGTTGGGCTACGATATGCCCGTTTCAGGTTGTGCG  
CGAAGGCTCGGTAACGGGCAACCTGATTACGGGTGATGCAGGCAGCTTGAACATTTCGCGA  
20 CGGTAAGGCGGAATATGTTTATCCGCAATGAGTGGCGTAAAAACCAATAAAGACAAATTT  
AGATGATGTGCGGGAAGATGCCCCGACCGACAAGACTATGCAAAATATGAAAAACCAAGTA  
CGCGGATCAGGCATGGATGCCCGATCCAATCCGGCCAATGTTTCAGACGGCCTGCAAAAC  
AGTTCGGGTATATCGGTACCAACACGCGTTACCGCCTGACCAAACTCGGCGAACAGATA  
GCGCGCCTACCATCGACCCGAAAATCGCGCGCATTTTGTGCGGCGGAAGAAACACGAC  
25 TGCATGGCGGAAATATTGGTGATTGCGTCCGCGCTGTGATTCAAGACCCGCGGAGCGG  
CCGCTAGAAGCGCGCGATGCCTCAGCCAAGGCGCACGAGCGTTTTACCGACAAGCAGTCC  
GATTTCCCTTGCTATCTGAACATTTGGGACAGCTTCCAGCGGAACGCGATAAAGGCTTG  
TCCAACAAGCAGCTGGTGCACTGAGTGGTCCGCCAATATTTCTGTGCGACCTGCGGATGCGC  
30 GAGTGGCGCGAGCTGCACCAACAGCTTGCCCAACCGCGATTGAAATGGGTTTAACCACC  
AAGGAAGCCGCTTTCAGACGACCTCCCGAAGTCAGGCAGCTCACGTCTGAAAATGCG  
GGTGACCAAGACCTATCTGCTAAACTCAAAACAAAACAACTGGATAAAAAGCAACACCGC  
GCCCAATCCGCGCCGCCAAAGAAGCGGGCTACGAACAAATCCACCGCGCCCTGCTCACT  
GGCCTTATCGCCAACGTGCGCATGAAATCGCCGACGGTAACGACTACACCGGCGCGCGC  
GGCAGCCGCTTCCACCTTTTCCCCGCTCCGCGCTGTTCAAAGCCAAACCCAAATGGGTG  
35 ATGGCGGCGAGAATTGGTTGAAACCACGCGCCTTTACGCGCGCGACGTGCGCGTTATCCAG  
CCCGAATGGATAGAGCAGGAAGCGCCGACCTCGTCCGCTATCATTATTTTCGAGCCGCAT  
TGGGAACAAAACCGCGGCAAGTCTGCGCAGCGAACGCGTGACGCTTTACGGTCTGACC  
GTATTGCGCGCGCGCCCGTGTCTTACGGCAAGTTGCCCGGAAGAAGCGCGCGAATC  
TTTATCCGCGAGCGGTTGGTGGCGCAGGAATGCGATTTGAAAGCGGATTTTTTTGTCCAC  
40 AACAAAAGCTGATTAAAGAAATTACCGAACTCGAACACAAATCGCGCAAGCAAGACGTG  
CTGGTCGATGACGAAGCCCTGTTTGCCTTTTATAACGAACGACTGCCCGAAATGGCTTGG  
AAAGACGCGCAAGGCAGCGTTTGGGGAAGTGAAGATTCCGTACGGATTATTGAATCTGAC  
AAAGCCGAGAGGTCTGTGAAAATGAGCGCAACGAGTTTCGTAAAAACAAGCGTAATGGG  
TCTCGCCAAAATGAAAATCACGGCAACACCGTAGGTTGGGTTGAAAACCCAACATCAGCC  
45 GCAACTGCAAAAACCTGTTGGGTTTGACAAATCCAACCTACGCTGCCCAACAAACCACCCCC  
TCCCCCGTGGGGGAGGGTCGGGGAGAGGGCAAAACAGTTGCCGACAAACCAACTTTTCC  
GCAACCGCAGCAAAACCTCTCCCTAACCCCTCTCCCGCAGGAGAGGGAACAGAGTGCCGCA  
GCTTCAACGATTTTCAGACGACCTGCGTCTGCAAATCTGCAGCAAAACCGCCCCCTCCCCC  
GTGGGGGAGGGCTGGGGAGAGGGCAAAACAGTTGCCACACAAACCAACTTTTCCGCAACC  
50 TCAACAAACCTCTCCCGCAGGAGAGGGAACAGAGTGCCTCAGCTTCAACGTTTTTCAGAC  
GACCTGCGTCTGCAAATCTGCAGCAACCTCTCCCTCCCCCGTGGGGGAGGGCTGGGGA  
GAGGGCAAAACAGTTGCCACACAAACCAACTTTTCCGCAACCTCAACACTTTTCAGACGAC  
TCCAAACCCAAAAGCAGCTGCACCCCAAAAAACCGTCTGAAACCCCTACCCCTCGCC  
GACATCCGACCTTCCAAGCCTGGCTCAAAACCGCGAGCGCGACAATCCGCGCCTGCTG  
55 TTCTCAGCCGCGACGATCTGATGCAACACGCGCGCACACATTACCGAAGAACAGTTC  
CCCAAATTCTGGCAAAACCGCAGACGGCAATTCAAACTTTTCTACCGCTTCGAGCCGCAC  
CATCCGCTAGACGGCGTGACCATGACCGTGCCGCTGACCGTCTCAACCGCCTGCACGCG

CCGTCGCTCGAATGGCTGGTGCCCGGCATGATACGCGAAAAAATCCAGTTGCAAATCAAA  
GCACTGCCCAAGCAAATCCGCCGCACTCTGCGTGCCCGTGGCCGAATTCATCACCCAATTT  
TTAAGCCAAAACCCCGACCGCAACGCCCCCATCTGCCCCAACTCGCCCCAAGCCATCGCC  
AAAACCGCAGGCGACATCCGCATATTCGAGCAAATCAACCAAGACGAATGGGCCGCGTTC  
5 AGGCTGCCCGAACACTGCTATTTCAACCTCCGCATTATCGACGACGGCGGACAAGAGCTT  
GCCGGCGGCCGCAAATGACGAATTGCAACAACAACTCGGTCAAGCTGCCGCCGTTACC  
TTCCGTGACAAACCCCAAGAATTTGAGCGCGACAACGTACCGCATGGGACATCGGCACC  
CTGCCCCGAATCCATCAAATTCGCACGCGGCAAACAACAGCTACCGGCTATCTCGGCCTA  
10 CAAAAAGAAAAAGACGGCCGCATCGCCCTGCGCCTGTTTGATACCACAGAAGCCGCAGAG  
CAGGCACACCGTCAAGGTGTCTCGAATTGATGAAGCTGCAATTAAGAGAGCAGGTAAAG  
GATTTGAACAAAGGCATCCAAGGCTTACCCCAAGCTGCCATGCTGCTCAAACACATCAAC  
GCCGACACTCTGCGCGACGACCTCACCCAAAGCCGTCTGCGACCGCGCCTTTATCGGCGAA  
GACGAGCTGCCGCGCAACGAAAAAGCCTTCAAAGAACAAATCAAACGCGCCCGCAGCCGC  
15 CTGCCCCCGCTCAAAGAAGCCCTCAGCCGCTACCTGCAGGAAACCGCCGCGTCTACGCC  
GAACTCAACAGCAAACCTCGGCAAACACCCATTGACCCACCTTCTAAGACTACGCCTGCAA  
ACCCTGCTCGCCGCGCGCTTCGCCACCCGAACCCCGTGGGCACAATGGCCGCGCCTCCCC  
ATCTACCTCAAAGCCATGACCTGCGCCTCGAAAAATACAGCAGCAACCCCGCCGCGAC  
GCAGCCCGCAAGCCGATATCCAAGAGCTGGAACAAATGTGGCAGGAAAAACAGACAGC  
20 GTATTAAACAAGGTCTCCCATTTAGACGCGCTCGCCGCTTTAAATGGATGATTGAA  
GAATTGAGGGTGTCTGCTGTTTCGCGCAGGAATTGAAGACACCGTATCCGGTGTCTGTTGAA  
CGGCTGTTGAAAGAGTGGGAAAAAATTGAAAAATAAAAAACAGCCTGAAAAGTTTCAGG  
CTGTTTTTTTATTTGACTAATCGAAGTTTCTATATCTATTTAAGTCCCTCTCAACTAAT  
CCAAAAGTTAAATCAGCAACATCTTTGGGGGATACGTTTAAATTTTCAGCAATCTGTTCA  
25 ATACCAATGCCATCATTTTTTAAATAGTAAGCATTTTACGTAATGCGCTTGATATTCC  
CTTTCCATTGGCTCTGGTTCGATAGTTTCGATATTTTTCTTTGCAAACAAAGGACAAAGA  
TTGTGTATATACATCCTATCAGTAATCATTCCTAATTTATGCATCCGATATGCTAAGGCA  
ACAAGTGATACACCAAATCGTCTTTTGATTTTAAATAAATTTCAATAGTGATAGGAACA  
TGACGATATAAGCGTAGTGCAGCCTCCGGCATTAAAAAGCTGAAGCAAAGGCATTAGCC  
30 TCTTTTTCGATAATATCACGAGGTTTCATCTTCTGTAAATTTCACTATTTTTACTATGTTCC  
ATACTGTATTTATCACGGATTAAGTGCCCTAATTCATGGGCAGCATCAAATCGACTACGT  
TCTGCAGATTTTTGTGTATTTAAAAATACAAATGGATGATTTTCATACCAAGTACAAAAG  
GCATCAATGTCTTTGTATCTAAAGATAATGAAATACACGAACACCCTTAACCTCAAGT  
AGGGTGATCATATTCGGAATAGGTTTCATTGCCAAGCCCCCATTTAATCTTAGTTCCTGA  
35 GCAGCCTCTTCAGGAGAAATATCAGAAAAATCAGGCAATACGGCTTGACTTAGTGTAAT  
TCTGTCTCGAGCCAGTCATTTAACAAAAAAGCCGTAATGCTATGATTTAATGCTTGTTTT  
TCAAGCCTCTTCGAGGTGCGTGAACGAGCACGAAACTTACTGCCTGAGATTTCAACTCA  
GGCAGTCTTTTCGTCTATTAGTAAGAAATGAACTGGAACCTAATAAATTGGCTAATTCA  
TTTAAATCAGGTATTTGCTCATCTTTTACATAGTTTCTAACCTGTGAGCGGTAATACCT  
40 AATAACTCAGCTAATTTTGTGTTGCGTACAACCACGTTTATCCAGCGCAAATTCAGTCTC  
TCACGATTAAATGTCTGCATGATTTATCATTCAAATATCCTGCTTTTTGTTTTCTTTCA  
ACCAAAGGCTCATATTTCTCAACAGGTTGCTTACGTTCAAGCTCATCAAATTTAGTTAAA  
TCAACATCAGCTAATATAATTGCTGCTTGTACCCAGTTATTTGATGACTAACAAAACCA  
CTCGGTAAAGATAATTCAAGTTGCACTTTATTATACTTCCAGTGAACAGCAGAACCCAA  
45 AACTGCACAGTATCAGGCAATCTAGTTTTGAATTACGAATAGCCTCCTCAAATCCCTTA  
CCTTTCTCGGTTGTCATTGGCATCCCGTGATGCCTACCAACATCTGAAGTAGCAGTA  
GCCACAATAATACTTTTAGTTTCGACATGGCGAGAGACATAGAAATGCACCACCCGACCA  
GGCTCAAGCGTCCAGCCATCTTTACTTAAATATACCCTTAGAGCAAATGTAATTTCTGCT  
TGCCGATACATCCCCAATGTATTTCTGTCAGATAATGCTGCTTTGTCTGAATATTATTA  
50 TGCGCAGTAAGTACAATCTCTTTAAGCATCTCTGAGATAAGTACTTGCTGATTTCACTT  
AAAGCAATATCACTATTTTGTGCTCGACTATTTCTCTACTTCAAATGGGAAAGGTTCT  
GATAATGCAAATTCACCATAAAAAATTTCTAATTTTATACGTAATGTTTACACAATATA  
TCAGGAAATATGAAACGTACAACATATCTATAAGCAATTAATAAGTAGCCTGCCCAA  
CCGTGTCTTTATCTTTCCGCACACCCGACCTGCAATCACGCAAACTTGGAATCCGTGT  
55 GTAGGGTGTGTCGGGTACATACGACGAGTCTTTTAAACACAGCCCTTCCCAACTAA  
ACCAAAGGTGCTGTAACCTATTTTCAGACGACCTTTTGCCACTTTGTAAAAACAATC  
TTCCACCATCTCTCCCCAACATCGCCCGAACCAGTAACTTCTCATATTTCAACAAC  
TCCTTGGAAGCAAACCATGTCTGGTATCTACCTACCCCGCCTATTCGCCGCCCATATCGC

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CGAACGCGGCCTGTTGTATTTTCAGCAGGGCAAGGTTCTCGATGTCCGAAAACTTCCGC  
CGGGCATTATCGGGCGGAGGTGTGCGGTTTCGGAAAACTATTGGGTATAGTTGAAGCTGGA  
TAGTGATTTGTATATTAAAGACGAAGGCTGCAATTGTCCTTATATCTAAGAGTGCAAACA  
TACCTTAAATTACTATATTGCATAGGCAAAATACAAGCCTATAACGAATTGGAAACAAAA  
5 TGCCGCTGTAACACATCTTCAGACGGCATTATAAAATCTGTTACCTTTTCAGATGAGTA  
ATGTACACCCTTATACAATTTTGTACTATGCCCCATAAATCCACGGCTAAAGATATCC  
TTATTATGTCCTATGATTTATCGAAACGACTTGTAATCGGCTTAGCATCAAGTGCCCTAT  
TCGACTTATCCGAATCGGATAATATATTTAGAATGGAAGGGGCAGAAACCTATAGGCAAT  
ATCAGAGAGAAAAACAAAACCATCCCCATAAAAAGGCGTTGTCTTTCCATTTATTTAAAAA  
10 ACTTCTGTCAATCAATGAAATAAACCCAAACGACCCAAACGATTGGGTTTATTCTTTTATC  
CAGAAACAATCCAGATACAGATTACGAGTCATAACTATAGGCTTAATATTACACGATTCT  
CATTCATCAAGGCGGAAACCGCACAAATACTGAAACACTATCGATCGATTTGTAAACA  
AGCCTACTTAAGTAACCTTGACGTCCTTATCATTTTCCTTTAAAAATAATCCAGCCCCGCTCACT  
ACACGAACTGGCGGACTTCTTGCAAATAAAGGTTACTAGATTTTCATTCATCTTAATAAT  
15 AAAAGGATTTTATCTTTATCTATGGCTACCGCCTTCAACATGAATTTACTGTCTAAAGC  
CCCGCGCGGATTCCATTCAAACGATACAAAAGCCTCTGCCTCTTTAATCGGCAAACT  
TGGCCACTTGGTAGATGTTTGTTTAAACCTCCCATTCTGCAGATAAAACTTTTCCATAAA  
ATGTGCATTTTCTAACAAGGCTGCCCGCACTGCATTTATCTTTGCTTTCTCAACATAATT  
GCGATAGCTCGGATAAACAATTAAAGCAAGTACAGACAATATCAAGACCACTGATATTAA  
20 TTCAACAGCGTAAACCCCGATTATCAGTCATTACTTTACTTCCAATAAGAACAGATTA  
TTCAACATATTTCTTTGAACAGACTTACTATCCCATTCACAGTATGCATATTTCCCACT  
CTATTTTTTAGCGGCCGGTATAGCCGGTTTGGCTGGGCCTTTTGGTGGGGCGCGCCGAC  
CGAAGCCTGGTCTTTCAGCTTCGCCAGCACCGCAGGGCCGATGCCCTTTACCTTGGTCAA  
ATCGTCTACAGACTTGAACGCACCGTTTTCGCGACGGTATTCCGCAATGGCCTTCGCCTT  
25 CGCCGGGCCTATGCCCGGCAGCGCCTCCAACCTCTGCTGCGAAGCCGCATTGATGTTTAC  
CGCCGCAAGGGAGAAGGCGCAGGAGAACAGCATAAGAACAGCACGAACATTTTCTTCAT  
GGTTTTTCTTTAAGGTTGCAAACAATAAACCGCATCTTGCGACGATAAAACGAGTCAT  
TCTAAAAATGAATATCCCAAAGTTTCAAGCCGTTCTCCGCAAAACCCGACCGGACACCGTA  
CGGATGCCGTCCCGCCATCACCGACATTTTTTCCGGGCAAGCAACATTTTTCGGGGC  
30 AAAGCAAAACCCCCGAATAATCGGGGGTTTTTCTGAATGGGTGTTTGGCAGTGACCTACT  
TTCGCATGGAAGAATCACACTATCATCGGCGCTGAGTCGTTTACGGTCCTGTTTCGGGAT  
GGGAAGGCGTGGGACCAACTCGCTATGGCCGCCAACTTAACTGTTACAAATCGGTAAA  
GCCTTAATCAATATATTCCGTAATGACTGAATCAGTCAGTAAGCTTTTATCTCTTGAAGT  
TCTTCAAATGATAGAGTCAAGCCTCACGAGCAATTAGTATGGGTTAGCTTCACGCGTTAC  
35 CGCGCTTCCACACCCCACCTATCAACGTCCTGGTCTCGAACGACTCTTTAGTGGGTTAA  
ACCGCAAGGGAAGTCTCATCTTCAGGCGAGTTTCGCGCTTAGATGCTTTTCAGCGCTTATC  
TCTTCCGAATCTAGCTACCCGGCTATGCAACTGGCGTTACAACCGGTACACCATAGGTTT  
GTGACTCCGGTCTCTCGTACTAGGAGCAGCCCCCGTCAAACCTTCCAACGCCCACTGCA  
GATAGGGACAACTGTCT

40

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 98>:

**gnm\_98**

CTATATTTTACAATTTTGGTTCATATGAATGTCTGTTCCGTTTCAGGCAAACCGTGTTT  
AAACGCTGTATTACAGCAAATCATCAGATAACGGGCCGGCAGAAAAAATGATTCCGCTCTG  
45 ATTTCTTATTTCAATAAAATCAGGTTAGATGATATATTGCCGCTTCTGTCTGTCTGAGCCGT  
TTCGGGCTGCACACCATCTGTTCAAAGGAAACCATGTTTCAAAATTTTGATTTGGGC  
GTGTTTCTGCTTGCCGTCCTGCCGCTGCTCTCCATTACCGTCAGGGAGGTGGCGCGC  
GGCTATACGGCGCGCTACTGGGGAGACAACACTGCCGAACAATACGGCAGGCTGACACTG  
AACCCCTGCCCATATCGATTTGGTGGGCACAATCATCGTACCGCTGCTTACTTTGATG  
50 TTCACGCCCTTCTGTTTCGGCTGGGCGCGTCCGATTCTATCGATTTCGCGCAACTTCCGC  
AACCCGCGCTTGCCTGGCGTTGCGTTGCCGCGTCCGGCCCGTGTGCAATCTAGCGATG  
GCTGTTCTGTTGGGCGTGGTTTTGGTGTGACTCCGATGTGCGCGGGGCGTATCAGATG  
CCGTTGGCTCAAATGGCAAACCTACGGTATTCTGATCAATGCGATTCTGTTTCGCGCTCAAC

ATCATCCCCATCCTGCCTTGGGACGGCGGCATTTTCATCGACACCTTCCTGTGCGCGAAA  
TATTGCGAAGCGTTCGCAAAATCGAACCTTATGGGACGTGGATTATCCTACTGCTGATG  
CTGACCGGGGTTTGGGTGCGTTTATTGCACCGATTGTGCGGCTGGTGATTGCGTTTGTG  
CAGATGTTTCGTCTGACTGGCTTTCAGACGGCATAAACGCTCCAGAAAACGCGGCAGGACA  
5 TATTGCCCTGCCGCGTTTTCCTGTAGTGTAATCTTATTTTTTTCATCATTATTAGAACCA  
GGTTGCATGATAATACCTTTCATTAACCTGAAACACTGATTAAGAACTCCAGTCTGTCTA  
ATGATGAGGTTTTTCACATCGCCAAACTTGCCAATCAAATGCTGGATTATTGCGGTCTG  
AGATTTGGTCAAATCCAAAGGCGACATTCTTAGACCCTGTGTGTAATCAGGGGTATTTT  
TGCGTGAAATCGTCAAACGCTTGGATGAAGGCTTGACCAATCAAATACCAGATAAACAAA  
10 CTCGCATTAACCACATTTAAAAAATCAAGTTTTTGAAGTACTGCCACGTATGTAGGTA  
GCTTTTGACCGATATTTGCATAAAAACTCCTTTGCTGGTGAAAGGAATTATTTTGCCAATT  
TTAAAAATATTTCTGGCACCAATAGTACAATGACAAAGACAATCATGCCAATGATTAAAT  
CAGGATAGCTAGAATGAGTCAATAACGTCAATGCTCCCGCCGCTATCACACCGATATTGA  
TGATAATGTCATTGGATGTAAAAATCATGCTGGCTTTGATATGGATTCTTTATTTTGAT  
15 TTTTGCTCAGTAGATATAAGCACAGCCAGTTGCAATCAATGCCAAAAATGCCGTGCCAA  
TTCATCAGTTGATAATTGGGCAGCTGCTCAGCACCAGATAAAACGCCTAATCACTTCTATCA  
CCCCAAATAACGCCAATATTATCTGCGTTATCCCCGCCAAAAATGCCACACGTTTTTTAT  
ACGCCAGCGTCATACCAATGGCTGATAGCGCAATATATAGACAAAGCTGTCCGCCAGCA  
TATCTAGACTATCAGCAATCAGCCCCATAGAATTAGCAAAAAATACCAACCGAACACTCTA  
20 TGATAAAAAACACAAAGTTAATCATGAGCACTTGATATAATAATCTTTTTCTAAGTGCT  
CATCAGGCTTGTAAACACTATCTTATCAACAATCACTTCGGTGGAATGATATGACTAT  
CAAAATTAAGCGGTTCAAGTACTTGTAATAATCGTTGTATCTTGATTATCGTGATAGACGG  
TTAAGCACCGCCAGCAATATCAAACGTGAATTCATAAATATCAGACACATCTTTTAAAC  
GCATGCGAATGAGCTGTTCTTCGGACGGGCGAGTCCATTTTGGTAATGTTAAAAATGGTCT  
25 TTTTCATCTATTTAGTTTCCTTGTTTTGATCAGGTTGGCTCAAATAAATCTGTGTTTATAT  
TGCTGCTTGGTAATTTTTGGATGGTTTGAGTAAATTGATTAGGTTAAAAATTTACCTTTGG  
AAGTACCGCCACGCATAATAGTTTAGATATGTTTATAATCTCTGGATAAAAAAACGTAAT  
AAGTGCTTACTGGATAACAAAGTCCAAACCAATAGCAGGCAAAATAAGGCATCCACCCCC  
CTTCTCTTAAGGATATATATTGAGAAACAAATCGCAACTAAACAGAAAAAACTTGGGA  
30 GATAAAGCCATTTCATTTCCCTATTCAAGAATCTAGCCAAGATAGGTATTTTGTATTCTA  
CAAAAAAGAAAGGCATTTCCAAGGGAACATGTCAGATAAAAACTTTTGTATTATTTTTTA  
CTATAGATAGAACCCTTGCTTCTCAAGAGAAAGCCATTAATAATACCGATGACAGCTATTA  
ATATATAGAGAAATAGTATAAGTATGAATAATCTTCATTAGACAAAAAGAAGAAATGGCAG  
ATAAATTACATACGATATATTGGAATATAAAATATTTACGGTCTAAACCTTGTTTCAGTTG  
35 CAATTTTTTTAAATTTGCCTTGCTATAAAAAATCAAAGGCGTCCATTAAACTATCTTTCA  
CATTAGAAATTTAAAGCTAAATAATACGACAAACAATGTGAAGTACTATTTCATGGTTTA  
TTTAAAAATAATACTATTCTGAACATTATTTAGATACAGAAATTAACAAATTAGAACTA  
AACAAGCTTTTAAATACTTTAATTTTATTGGAAAGCTATAAAAGGAACTATACTTTTACA  
CACTAGTCACTTCTTTTTAAGAGGCAAAAGGGATTGGGAAGGTCGTCTTGAGATAAGCA  
40 TGGTATTTTCGGCCAATGGTAAATAGAGTTTACCTCAAATAGGGTAGAACCTCCTTCATC  
TGTCAGTTAATAACAGCCACTTTTACAATGCCCTGTCAAAATAAAGCGGCACGCCCGATT  
TTTCACTCATCGTCATCAAATAACCCATCACCTTTTGGGGCCATTTCGATGCCGCGCACCA  
CGGTCAGATTCTCAAACGGGGAAAAACCAAAATATCCTCCATACCGATTCCGCCGTTGA  
TGCCGTCTGAAGCACCGTCCATCAAATTTTCCAACCTCTGCAAACTGCGTTTATCCGTT  
45 CGAGGTATTGGGCGGTTTTATTCAAATGGCGGAAAAGCTGCCGATGCTTTTCTCTTTTT  
TGTCTGTAAAATATTTACCGCTTCCGGCGTTGCAATTCAGGCAGCCCGATTTTGATCA  
CGCGCGGCTGCACAGTTTGTGCTTGTATCCGCCCACCTTGTCCAGCCACGCCCGTATCT  
CGGGGCGGACTTCGTCTTTCAGACGGTCTTCGCGGTGCAATGCCGCACAATGTCCAAAC  
TCTCGCCCATAAACGAACCGTCTTCTTTTTGACGACGGGCACTTGTTTTCGCACCGATCA  
50 TACCGATCGGCGTTGCCTCGTCGTTTGCCAGCACGGCTTCTTCAACGTCCGCGCCAA  
ACAGCCCGGCAGCCATCCGCGCACGCACGCAAAACGGGCAATGGTCGTAAATATACAGTT  
TCATCAAAATATTCTTCGTCAACCTGTCCGTACCGACTACCTTAACACCCCGCGCCGCC  
GAAACAAGTTTATCTTCCCGCTATGCACCGTAAATAAATAAGCTGTTACAATAAATCTG  
TTTTTATCGGAACGGAAGACCCCATCATGACGCCATCAGCCCGATTCAAGACACGCAAA  
55 GCGCGACTCTGCAAGAATTGCGCGAATGGTTCGACAGCTACTGCGCCGCTCTGCCGGAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 99>:

**gnm\_99**

5 TCATACATATAATTAATATAGAGCCTCAAGCAGATCAATTCCAAATATATGCTGAGTTTG  
TAGCTATGTTAAGTTTCATGGATTTCTAACTCTAATCCTTATCTTTCGAGGTGATGATTG  
TCTTGGTCCAACTCAAATTGTTCTCATTCTATGAAGGACAACATATCTTACTTGGACCAA  
ATAAGTTCCTTAATCTTTAAACAAAATCAATTGGCGTTAGTAAATTAATTCATGTCCTAT  
ACATATTACTCTAGGTCTAAGCTTACTTCAACTGACATGGGATCTCATAATCACTGGTTT  
ACTTTAGTCAAGTGGTAAATGGGAAAGAATCTTGGCAAATTGTTGAAAGGGAAGTGGCAC  
10 ACaAGAGAAAGTAAGAAACCGATAGGAGTTATTATTCCTTCATGATCAGAAGTGAGATTG  
AGAGAATCTCACAAGACAATCATATCTTGTGTATAGTGACATGTTTCAAGAATAGGGT  
TTTTAATTGTTGACACACACACGATCCAATCCATCAAACCCAGCCTGATCTCTTTTTTCGT  
GGCTGCGAAAAATACCGTCAATCAAGAGAAGAATAAGCATATCTCTCTGCTTATCCCCCA  
CCACTTTGGGCTATCTCACACCCACACCCCTTCATCTGAGCATGATTCTTGAACAAAATAA  
15 TATTCCTCGAGAGAAAAAGTAAAAGCTTGGTCCACATAAATTGTAAGATTCTAATCCGAT  
CATGCATAAAAAAGTTGCAAATACATATATAAAACATGTGCGGATGTACCATATTCTTTA  
GCATCTGCAACAAAGAAACAT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 100>:

**gnm\_100**

CGACCCGAGTCTTCGAGTAGGACCCACCTCTGAATCTGTGACAGACGCCGGTTTCGTTCT  
CTCTCTCTCCTTTTTTCTCTCTTTGCTTTTCCAAAAATAAAGTTGTCTTTTTTTTATT  
TATAATAAAATGATTTGTTGTTTCACAGTGTGTTGTTTGGGGTAAAAAGAAAAT  
CATAAGGATGCTTTCAATATTTGTTTGTGTTTGGTTGAGTGATTGCTGAAGCCAACTTAA  
25 AAGAGAGAGAAGAGAAGAGTGACTCTGTGTGTGTGTGCAAGAAAGTCTTCTCTTTCACAC  
CTTTCGTTTTCTCGAACCTCTCCTTTAAAGATGGTGGAGGAATCTTGGGTTTGACAACTC  
ATTAACACTGACCCTCTTTTAGCTCTACAAGCATCCAAGGAACCCCTCTTACTTTTCCC  
TCTTCTTCATTCCCTCTCTCTATATCTCCCAATTCCTCTCTTTTTTTAACCTTGATC  
TTCTTCTTATAAGAGACTCAGA

30

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 101>:

**gnm\_101**

TAGCTTGAGAAAAGACTCAAGTTTGTCTGCTCCCACGCCCAATAAACTCGCATAAAAGAA  
TTATTCTTGTTGTATGACCTTCTTCCAAACGGAACGCCATCCCTGCATGTAATATATAC  
35 ATGACACAATATTAATATTCTTTTTACTCTGTAGTTTGAATGTGGTATTTTCGTTTCTTTT  
CTCTTTTAGTTTCAGAAGGCTTGAAACCGCAACCCACTTCACGGCTCATTAAAGCTCTCTA  
TCATACAGAAACCATATTGTAACAGATGTACTGGAAAAGAAGTGAAACATGATAATGACA  
GCGAGACGTATCATTTACTCTAGAGGATTGTGAAAAGAAAAAATTACCTCTGAGAGGCA  
CTCCAAGAGCATTTTGCAGCATTCTTGATGAAGTGGAACAACTCCAACCGGTCAGCTAG  
40 AAAGAGAAGATGAATCAACTCGGTGCCAAAATTCACAGTGTCTTCCATGTTCAACTCTCC  
ACTATACATGAAATTCATCATAGCCTTGAATGCTTCTGGTGATACATCGGTTAGGTAAT  
CGTTGATGAATGGCTTCACTCATCCATTTGTAAACATCTGGATGTTCATAGAGAATAA  
ATAAGAAAATTGAGAATCAATATATTCATGTACATCAGAACTGCGACACTAAAAGAGATT  
CTC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 102>:

**gnm\_102**

5 TTTGCATT CAGGAGTAGCGGTTGACAAATTCAGCAAATGAGAATATCCAGAGATTGGTG  
TTCTCTTAAGTGTTGATTACTATTGTTTATATCATTACTACAGCTCTCAGACCCAACTGT  
GAACTGATGCTGTTGCTGTCTCCTCTGCTCAAAATATTGTTTTTGCCTTCAGGTGCAACA  
AAGATGAAATTAAGAGTGAAGCACAATGGGAAGCATATGCTGACAAACATCTCATAAAG  
AGAACAAGAAGGAGCTTACACACCTCTTCTTCACTGACGTGTGTGACTGATTACCCCAA  
AGGTTCCCAGAAAACAATAACAAGTCAAAATGAAAACAAATTATAAGAAAAATAAGCTAT  
10 TATCCCAACACCAAGAGGTTTTAGCTTCACCCCATTTATAACGGACCTCTGAATTTGAAA  
TATCACTAAAAGGAAAAAGTCACTCACAGCGGCTACTTTCCGCCTCGATCCTCCCATCCA  
TTGCAGCATTCGTAGAAATTCGGGTCTTAGAGTTTTCAAATTGTACACTGCACAAAGA  
TTTCGAAATTAAGATTTTCGACGCCACCACGAACAATTCACCCAACGATTCATAACTAG  
GTTGCGATTCACTATCAATTAGACACTGAGACTGAAAATTTGAATCCTAATCCTAAATT  
15 TCCGATCAGATCTAGAAGAATCTAGGTAATTTCTACGAAATCCCTCAAAAAACATACA  
GATTCGAGAGAGGAGAAAGAGATATATTTAGAAAATTCGAGAAGCTTCGACAGTATCTGA  
ATCGCGTCCCCAAAACGGAGCTCGGAGCATAGAACGATTACGAGAACTTGATAATTGCT  
GCTACCGAATGATGAATCCGATGATCTTTGATCAAATTTGCAGCAGGGGAAATCAAAGAC  
AACGACACGAACGGTCTTTCAAATTTCGAAAATTTCTTGTAAGCA

20

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 103>:

**GNMCG08F gnm\_103**

25 CCCAGTTTGCTTTATTTTGTAAATCGCTTGTGCTTGTGTGCGACACCTCAACTTGAGAGT  
AGTATGTTATTGAGATGACGCAAAATTTATACATTCTTATGTTGTACCTGTATACTTTC  
ACCAGGCTGAAGAATTAAGAAAATGCCTTTGGGAAAAAAATGTACCAGCAAAGGGTATAT  
GTTGGGAATGCGGTATTGGCATCCATTCACTGAGGAAGCCATTGAACAGGTATGTTGAAT  
ATGGTGTGTTGGTAGTATCTTGATTTAAGGCTAAACACAAAGTTTTCTTTTCGTATTTGC  
ATCTTCAAATATTGCTTACATTTAAAGTAAACCACTACATTTTGTGTTTTATCAAACA  
GCATTTGCAAAATAATGATTGAAGTATGTGTGAACACCTGGAGTTTGCATTTGTGAGTC  
30 TTA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 104>:

**GNMCG09F gnm\_104**

35 AGGTCGGTATCCGTTTCAGAACCTGGTATTTAAGTGGCAAGACCCCAAGCCCAATTGTAA  
TGTTTCAGTATGTTGGTCTGAGCAGCTGGGATAAACATGTTGGATATAGAAACGTGAGTGT  
GTTTCCTGTGACACATAATCATATCTTGCTGTGGAAGCAAGTGGATTGCCGTGAAGTTAG  
AGGAGATGAGTCTGGTGACGAGAAAGTTGTGGAGGAAGGGACTGGTTATGATTATGAACA  
ATGGGGACTTGGGAATTTCTTGAGAGTTGGCAATTATCTGACACAGTCTTCCTTGTTGG  
40 TGAAGAGGAAATGGATGTCCCTGCTCACAAGGTTATATTACAAGCATCAGGTAATTTTCC  
TTTGAGATCATCTGATGGGGATGTCATTCAACTTCGTGGAGTGTCGT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 105>:

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**GNMCG10TRB gnm\_105**

GAACGACCATTATCTGGAGAATTTTCATGCAGCTTAAACGTGTGGCAGAAGCCAAACTGCC  
AACCCCATGGGGCGATTTCCTGATGGTGGGATTTGAAGAAGCTGGCAACCGGACACGATCA  
5 TGTCGCGCTAGTCTATGGCGATATTTCCGGGCATACCCCGGTACTTGCGCGCGTCCATT  
CGAATGTCTGACCGGTGACGCCCTGTTTACGCTTGCCTGCGATTGTGGCTTCCAGCTCGA  
AGCGGCATTGACGCAAATTGCCGAGGAAGGCCGTGGTATTTTGTCTATCACCGTCAGGA  
AGGTCGTAACATTGGTCTGCTGAATAAAATCCGCGCTTACGCACTGCAGGATCAAGGTTA  
CGATACCGTAGAGGCTAACACCAGTTAGGCTTCGCCGCTGATGAGCGCGACTTCACTCT  
10 TTGCGCTGATATGTTCAAACCTCCTTGGCGTCAATGAAGTCCGCTTGTAAACCAATAACCC  
GAAAAAAGTCGAAATTCTGACCGAAGCAGGGATTAATATTGTTGAACGCGTACCATTGAT  
TGTAGGTCGTAACCCCAATAACGAACATTATCTCGATACCAAAGCCGAGAAAATGGGCCA  
TTTGCTGAACAAATAACCCTCTTGCAATTGTGTAATTC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 106>:

**15 gnm\_106**

TCATATTCTTCAATTTCTTGCTCCTCAATGACAACGATGGTAGGCTTTACACTAGGAGAG  
GGACGAAGCAAGTCCTGAGCTTCTTCCCAAGTGAGTCTCAGCTCCATAGATTCTTCACTA  
TGCAAAAGAAGTCTCTTATTTTTTGACCAATGGTTCGAGTCTCTTCTTCTCTTTAACT  
CGTGTAGGATCATCACCTATCCTGCCCCGTTAGTCTCACTGTTCAAATTCTCAGGCATA  
20 CCATTCAACTCTTTTCGGTATTAGTGAAATACACGAGGAACCATTTATGGAGGGTGGGTTT  
TCTGTTACACCAGACGATGATGTGTCCTCAGTTGATGTTCCGTTGGTGAGCCACAAACCC  
TATTTATAAATATTGTAACCGGATAAGAATGGAGCTAAGCAGAAAATAAAAACCAGCACA  
TTCTACAGAAACAGTTCATAGAAACCCCAACCTGCATGTCTCCAGCATTAGCTGCCTT  
CCTGGAACCCATGATTAGTTTTCCGCCAGGATCAACCCGACTGAAAGTTACTGTAGAGGT  
25 GAAAAACACAGAAAACCAACAATAGTTTTAGAAAATGGTTCATGAAAATTTGATGTTAAA  
ACCAGCAAATGCTTGAAGCTTTAGCTAAGACATGAACTATATTAAAAGTACCTGTATCAC  
CAGCCTGTAGCATCATGGACTGTATGCATGGAGTGACACCTTCTAAAACATACATTCTAC  
TATTGTTATTGGGCCAATATCTGAAGTGAACGTCCACTCCCTACCCCTCACATCTTGGA  
TTTTCAAAGGAATGCTTCGGATTGACTAATCGGAGGAAAATATGCCT

30

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 107>:

**GNMCG12F gnm\_107**

CCCACTTAAATTGAACATAATTATGTGTTTGCAAAAACTTAAATACCACATGCAAAAAGT  
TTAGTTTTATTTTAACTTTTAAGCAATTATGAGCTACTTCTCAACTGTCCATTTAAAAAT  
35 GACATGTTATATGTTCTTTTTTGTGCTCATAGTTATGTTATAATTGTTTTTTTATTAT  
TATTATGAGATTGTATTTAAAGCTCAAAGAGCTAATGCTATAGTTTTTTTTTCTTTTT  
TTGTCATCATTTTTTAAACGAGAAGGTAGCCAATGCTATAGTTAAATATTATTTAATA  
CTACACAAAAATCAAGGTTATTCAATTCAAAAGAAAACCAATGGACAATATATGCCA  
CATTGACCTGAGAAATGAAATACATCCATGTTTTCAAATTTACATTTAGCCCCGTAT  
40 AATATTAATTACATATAGGACCAATTTTGACGTAAGGTGAATCTCT

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 108>:

**gnm\_108**

5 GTTGTCTGGCATTACAAATTAATGGTTTAGCTGTCAAATTCAAAAACATGATTTTATCC  
45 ACAATGAATCTAGTAACAATCTACAACAACAACAAAAGAATCTAGTACTAAAATTGGGG



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TCAAAATCTATTGTTAAACTTAATCCTCTTATTTGAACTTCATCTTATCTTAATCCTC  
TTATTGCTCTTTTAGTTGAAACAACTCTCCCACTTTTGAATTTATAAATAAAATTTTGCA  
AGCTTCACATGGAGTATAGTGTGATAACCATATAAAGTCACATGCGGCTAGACTTGAGAG  
TCGACACATATGTTTATGTGCAATGTATTGGTTGGGCTTCTTAATTATGAAACAAAIGGG  
5 CTTTGCAATAACAAGTTAAGTTTCTCGATCAAGCTAAGCAATATCTCAGCTCGTGTGTTG  
ATTGTTTCTTTTCTTGGTCAATTCATCAAGCTATATTCTTCTAGTCACGGTTTCGTAC  
CGTTGCCTCTATCCGAATCCATGCAACCTCCCAACCATATATAACAGATAAGAGATTG  
CACAAATGACAGCGAAATGTGCTAAACTCGTCTGGCGTTTCCTAAGAAGACGACATTATT  
GTGTGAATTGGAAGAAGCGTGATTAGGGAAACTTGACGTGGACTTTTTGGGCTATTGACA  
10 AATAATAACCAACTTTGGCCCAACTGTTCTGATTAAATTTGTGGTTCATTTTGTCTTCTA  
GTTGCATCTTTTCTTAGCCTTTGTCCCCTCGGTTTAGCCGCTGTGAGGTCGGGACCGTTG  
TTAATTATTGTAACACCGCATAATTACATAATAATATAAACTCGCAAATAAAAAAA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 109>:

15 **gnm\_109**

TGAACACGTAAGTCTACAAGTTCTAATTTAAATCACAGTTTTTCTTTTATATTTTAGA  
AATTTTTACGGACGGAGATGGCTGTGGAATGTGGATGTACATAATCTATAATTTATTTT  
ACAGTTCTCCAATAACATTAGGTGAAATTTTTCCCGAAATTTTCGACTTCGTGAAAT  
TGGACAAAAAAGTCCATAAACCGTTAATTTCTGTTGTGATATAGATTTGTGGGTCGTA  
20 AATAATACTAGCAAAATCCAACAAAACCTTTTGTCTTCTGTGCTTTTTTCTCTTAGATT  
TTTTTGTGTGTGCTAATTTACATATGCATGCCCTACAGATAATTCCTATTATGCATC  
TACAGAACTCAATTATCGTCTCAGTGATAATAATGCAGTAACTGTAAGAAACGGACGTA  
TCAATTTCTTTTCTGACAGATTGAAAGTTGTCTTAGAGAAATCGGTACTTATATAATGA  
GCATATCATTTTCTCAGCGTGAAATCAGAATGAACCATTTATGATTTTACCCACTATATA  
25 TTAAGAGTAGGTTAGGAGAAAATTGATCCTACGTGGTACGTATTAGCTAAGACCAATT  
CAAAAATATGAAATTCCTCTAATTTATCATTA

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 110>:

**gnm\_110**

GGATGTACGATTAGAGAGAAGTAGGACCATGGAAGTTAGGGAAGTAGGAACATGTCATAG  
ATAAGGCCCCACCCAAATATGTGGTCGTGCTTCATCTTAGAACCTCGTGGTGTGTTGGCTT  
AGCTACGTCGTCAAATCATCCATCAGAATCCAGTTTCAGTTTTGTCTTCCAATCATGTTT  
ATACACGTGTTTCTATCGTCTTTAAAGATATCTCACGTCTCTTACATTGCCTAGTTGCCC  
TAATAATTTTCTGCCGGTCCGACTAGTTTTATAAGACTATTTGTAGTTTGAATGTGAAGA  
35 TTCACAAAATGGGTCTTCATAAAAAGTTAAAAACCCCTACCAGTTTTCGTGATTTTCTA  
TTTTGATGTAAGTTTCTGTGAATCGATGTGATAATATGTCATGTGAGTCTTTTTTCTCCG  
GCTGACATAGTAACATGTGATTGATAAGAAAATTATTTTAGTATCGTGATAAATTTTGT  
GAGGTGTTTAACTTTTTGTTTAAATCTTAATGCAAAAACCTCCAAACCCCTAGATTTCTTT  
TTTGTAATTGGTTTTGCATCAAAACACAATATCCGAATGTAAAATATTGAATTAGCTAAA  
40 CAGTAGATGTCCACTAGATCATGAGTAGGCGATATACATATAAATTCATTAATTCAGAG  
AGAATAATAATTAATTTTGTAAAAGGTGCTAAGGCAAGGTCTTAATACAAGTCTAAAT  
TATTCAGATGAAAAATTCATGTTAGGAAATAGGTTGGACCATAAGAGGATGGTGCTATCA  
ATCTATTAACAAAAGTACAAATACCCTGAGCTGTACTGCCGG

45 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 111>:

**GNMCG15F gnm\_111**

CCCTGCTCTTCCGTTCCATGTTTCTGCACTTTTTGTCCATCCCCATTCCCACATTGTCAC  
CGGTGCTGGTAACCTCCCTTCTCTGTGAATCATACGTTGCTAATAATTCTTCTACACTCCC  
GAGCGGAACCTAACGACTGCCCCAACGAAAAAGAAAAGAATTAGAAGTGAAGATAACAGAT  
5 TCTTTTGTGGAGCTTTAACTAGATGTAAGATGAAAAGTGTTTGTTACCTGTCGAGCTTCA  
AGGTTTGTAGACAGCCATAGCACCACGATGGAAGACTTTCCACAACAGCATCTGCCAAG  
TCAGATATAAACATAGGTTCTGTTCTAGAGCAGTACTCGCCCCAGTTTGTATACCA  
GACTTCAAAGCCAACCTTTTATACTCAACATCTATCTCCTCCAGAGTTTCAATGTGCTCG  
10 CATCACAACCTGTTAAATAGAAACAAACGTGAGTTTCAAATAACCAAGAGAGAGAGAAT  
TTGTG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 112>:

**gnm\_112**

TTAAAAAGGGTAAGTGGATCCTGACCCTGTATATGCTGAATGAACTTTGTCAATTTTCTGT  
15 TAAATTAATTTTCGCTGATGCCATCTATGCTTTGATGATGACGCAGTTAGAAAACAGCAAC  
CTAAGCAAAGAAATCCCAGTATTCAATCGTCTTGTAAGTTCTTAACATCTTCTATCGATT  
TGGGGATTATTTAATTTGTCAATTTCAAGACTGATTTTCTCTCCAAGCCCTCACTTATTTT  
GTCTTGTGTACAGTTGAAGGAGGCTGCTAGCTTCCTAACATCCGGATTGATATCCCCAGG  
AAATGAACCGATGTATGAATTACATAGTCATGTATCTTAGGATTGTAAACATCTCCAGGT  
20 TTATATTTCCAGACTTCTCAATTATTAAGCTTTTACCTCTAGTTCAAGATTCCAACAT  
CGGAGATCGAGTTTCAAGGAGCTTCAGTACATACGTGATGGGGACAGCAATGGGGTGCTG  
CACTTTGTGGGTACATCTTATGGTAGTCATCAGTGGGTCAACCCCGTTCTCGCAAAGGTT  
AACCTCACTTTTATCTTACTTTCTTTATTCATATTGTTGGAAATCCAATTACCATGACAA  
GGAATTCGCTGGAGAAAAATATTTCTTATTTGAGTTCTTTATGTTTACAGAAAATCA  
25 ACATTACATCGAGTAGTCCACATCCAGATTCACTGATCCAAAGGCTTTGGCTTCAAAG  
CCTATGCGGTATGGTCCACCCAAGTTCGCTCGGATTATATGACTAGAATTTGGCTTGAAC  
TACAAAATTGACGAAGCATAAAATTAATTGAAGTGAACCTTCTTCTCTTAGATACAGT  
ATTTAACCATATGATTTCAATTTTTTTGGCACCAGGGTACTTCCTTGCAGGGCCTAGGAT  
GGAAGACGGCCATATATCACTGCTGGTGGTGGTGGACTTAGGCGAAGAACATCAGGTCTC  
30 CTCCATAACTTCTCTTTCTACATACTCTGTTCTCATAAAGACACAAACGGTCTAAATGCT  
CCATATGTAACCCATACTCGCAGAAATAAGAGAAAATGTATTTGAGTAAACAACATTTA  
CTTTAAGTTCTGAAAATAATATAACACGGTGAGGATTCTGTTGCAGCTTATGTGCAAC  
TATTACACCTTCAGAC

35 The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 113>:

**gnm\_113**

ACATTACCAATGGAAGCTAATGTTGGTTTTTAAATACTCGAACCATATTATCTAGAGT  
CTTCTAGACTATTCTATCACCTAACAAACATGCAGTTTGATTACGAGTTTTTCTCGTTAC  
GGATTTAGTGATGAGCTAGTAAATGATTATTGATGACAAAACCTATAATATGGTTAATG  
40 TTTTCCATCTACCATTTACGAAAAAGGTAACAAATTTTTGTCACTAATCTTTCGATAAAC  
ACAAGTATGCAATTTTATTTTTATTTTTGTATTCTCTACATATGCTAAGAATCTTAATT  
AAAACAATAAGACCTTACACTAGTTTGTATTATTTAGAACTATCCACATCCCTTACT  
TTCAGTACAAATGTCATCTTCATTCTTCCCTAGACATTATTTAAGAAATATTTACGAAAT  
TTTACGAAATCAAATTAATAATTGTCATTGAGACATTTAAAAGTTTATCACTAACTAAT  
45 TCCCTAATTAGGGATAAATTTTCAATTTCTTATGACATACAAACAGAAACGTGAAACACGT  
AGGCCCTCTTTGTTAACCTCCTCACATTAATAATTTGTGTAACATCCTCACATTAACA  
CTTCGTGAATGTTTAGTTCTAAGAGAAGAAAACTTTAAATATGTTTAGCATATATTTA  
GTTAACTTTGTTCTATGAAATTTAAAGTAATTCTTTATGTCTTATGACATTTAAAAGTTT  
ATCACTAAATTATAAGCGATTTGATCTAC

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 114>:

**gnm\_114**

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5 TCATTGTGACTAGCCAAGTAGCCATGCTGGACACTACCAAAGTGGTCTGAGCCAAGACTT
  TCTACCTTTTGTTCCTTAGTCTAGACAAAACCTTGCAAATAAAGTATATTAGTAGGC
  TGAAATTTTCCTTGTTTCATTTATTTTCATCATTCTACACAACTAAAAAAAATAAAAAA
  ATAAAAATAAAATAAAAAAATTAGGAGGTTTAGTAAATAAAACGGACAATGAAAAAAAC
  ACAGAGAGAATGATTTATATATGTTAATAGTACTAAGGAACCTTTGGATCCAACAGGAAA
  ACGTAAACTGTGGAACACCACGATCAAGTACTAAGGGGTAAATCCTTTTGACTCCTCAA
10 GCGCACCATGAACACTTTGATGGAAACAATAAGCAACTCAAGAGATTAGAAGATGGGAAA
  GTTTTATCACTATATCAATGTATATTTGTTACCAACTCACATAGTTAAGCAATCCGAAGA
  TTGTGCGACGGAAGTGATGGGCCACACGAAGGATCAATGAACACTTTGCATGAGACGATG
  GCACAACTCACTGTTCCGAATATCAGCATGATCATCTACCATCTTTAAAATCTAGGATT
  TGCTTAAGTGATTTTTTTCTTCTTAACACTTCGCCAAATGGATCTATAGATCTAAGGTT
15 TCTTCTTCTTCTCCAAGGATTATATGTGGGTTTTAGTACTTCTCAAGTTATCTCGAATC
  TGGTTAGTTTTACTAACTTACTATTTTACTAGCAAGGAAAAGTCCAATAATACGACTTGT
  GTAGCCAAAAAAAACACGACTTGTGTAAATCTGGAAATGACGATAATACCCTCGTAA
  AACCTAAACTGTGAGGAGAGAAGAAGGTGCCCTTTTTGTCCCAGCAAGAATAAATCACG
  TCGGCCCTTCTTTGCCCTTCTCCTTTGTCCAGATTTTCTTCTTCAACCTCTTTCTTTGC
20 TTACCCGCCAAATTCCTTATCTTTGAAATTGCCTCATCCCTTTTCGCGTTTGGTGATTCTG
  AAGATTCCGCTTCATATCCTTTTGATCTGTAAGTTTCGATTTCCGATCTCCTTCGTTTGT
  TTCTGTCAAATTTGGTTAGAAATGTTCCGAGCATTGAATTTTCTCGTACATGATCTCT
  GTTTTAACTCTGTGTTTGTGTTGATCAAGTTGTGAAATTTTCAATTTGGGTTTTGGTGGCTC
  AAGGGTGTGTTTTGTTTCGTTAGCTAAATCCCCAACAGAGAGCTTTCAATTTAGAGATGGTG
25 GTAGTTGTAAACACTTAGGCTAAACATTAATCTCTGCTCTTAACTAGTGTTGGTTTGGAT
  TTTTGTAGAAACAATGATTGGAGCATAAGTTTTTATAGAAGAATGCTTCCAAGTTAGTT
  GCTTTTGTGCTATATCTTGAGGGCTTATGGTTATACAACCTTATAGCTCTTTTATTTGTTT
  TTTGTTCTCACTTTTCTGTCAAGGTCTTATGTTAGTGTTTCTACTTTGTTTCTTCTTTA
  CAGGTCTATAAAAGACACTACTGGTTGAATTAGAATCTGTAAGAGATATTAGTGTTTT
30

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The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 115>:

**gnm\_115**

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  AGCGATGAAGGCACTACTCTTTTGGCCATCTAACTATCTAAATAGGCCTAGTCGAGGATA
  AACCTTTGGTTCTTTTCGTTAGTTAATAGGCCTAGGATTTGTCTTGTACTAATTAAATGT
35 TGTATAATAATGTATACATATATATATATATGTTTCTTTATAGTTTCACGCTGAGACATG
  AACATTAAGTGAACAACCTTTAAACCTTGAATATAATTGAGCTTGTTATACGTGTCAGTT
  TCTTATTACATCAACTGAATTTATTTATCACTGAGACATTTATTGACTCCAGTCATAAAT
  AGTGCGTATATGTATAATTGTGTAAAAAGGTATGTAAATGTATGTTGAGAAACAAAAA
  AGGTAATATGTGTAGAAATGCTAAAAATGAAAAACAAAGTACAAAAATCAGAmCTTTCATT
40 GGTGTGGCATAAGTGGTTACTGGCTCGGATCTACTAGGACGAGTACGATTTTCGGCCACGT
  ACAGATCTAATATCACCGCACCAAAATTAACAGATTGTTGGAGTTTGTCCAATTTTCAAGA
  AGTAGATTCAAAACAATACTTTTCAGAAACGGAACAAAAGATCTAAACGATATTGGAAAAAGT
  CTACTGTTGTAACCTTTCCTCACAGGACCACATCCCCATCTCCGTCAGTAGAAGAAATTCC
  AAAATAATAAAAAATAAAAACTGAGAATAATTGATATGTCAAATAAATTAGAACTAGCGAT
45 ATACTGCAGTGAATAGTAGATTAACTATGTTAGAATTTGGATGATTCTACATAAAACCC
  CAAAGACTAGTAAATTAGTCATGACGCATTAGTGGAGAACATTTTCTACATTTAGGAAA
  GATCGAAATACCACCATTTT

```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 116>:

-635-

**GNMCG19F gnm\_116**

CTGTTATCGTTGCGGGTATTTCTCAATCTCTCTAATTTCTTCTTAACTCCAAATTTCT  
GTTTGATTTTGGACTAAAGTCTCGATCTTTTCGTGACCCTCTTCTTGATTCTCTGTTTAG  
CTCTTAGTTTGTTCATGTTCTGTTTTTTGACTACGTATATGGTTTCTTAGTGCGAATCT  
5 TGACTCTTTTAACTATAAAATAGGGAAAAATATGTGACTTTGGTACATAAAAGGGAAAA  
AATTGAGACTTTGGTTGTAATGATTTTGTATAGATCTGCGTATGAGAGTTCTCTATTCT  
GTGAACAATTCATAAGGACCAATCTGGTTGGAGGGAATGCTATTTGTGTAGCAAGGTGC  
GTTTTTTGAACTGTGTGAATATGTTTGTCTTATATATAGAGTTTAGTGGTGATGT  
TTTGTGTGCTGATTGAGAATCTGTGAAGACAGAGACTACATTGTGG

10

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 117>:

**GNMCG20F gnm\_117**

ATCCCCCATCTTCATCAGCTCACTTCTCAACGCTTCGCTCTTCTCCGCTAACGTATATCA  
GCTTGACAGTTGGCTACGTGTCTTTAAAGCTTCAGGGAGAACAACTACTGCTCTTTCTTCT  
15 TGTCTGCGACTCCACTTCTTAGCTTTAACTGATCGTAGTAAAGAGCGTGAAGAACAATG  
TTTACTGGTAATCTCTTGTCTGTGAAGCGTGAAGACGTGCGTCGTAAAGAAAGCTTTAAG  
GGATCCATTGAGCTACACACTTTTCCCTTTTCGATCTCGTCTAGATTCCGATGAGCTTTC  
AAGAAGATGTCTATAGCTCTGTAGAGATCGTCGTCTGATTTTCTAGCGGATTTCCGGACA  
AGATTGCGCAATCGCGTTGAATTTGGAGATTGTTAGGTCTCCGTAAGTAGCGATCTCCGCT  
20 AAGTAAGAATCAACTGTTTTAGCTACTCTTTGTAGTGAAACAGAGCAG

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 118>:

**gnm\_118**

TTTTTTTTTTTTGGGTGAATTTTTTTTTTTGTTTCAATTTAATTTATCGATGTGAAAAAT  
25 TAAACTTTTATGGGTGAGATAGAGAGAGAAAGAGGGAGAGAGCATTCAAGTGAACGAAA  
CGCATAAAATGCATGCACGACACTTGAAGACACACAAAACTCGAAAAGTAAGAAAAT  
CGCAGAGATTTAGAACAGACACAAAGTGAAAGACTTTGGTTTTTTTTTACTTTGTAAAG  
ATATGTTTTTTTTGGTATATAATATATATAGAAATGAAATTTAGGGTTGGTAGGAATCATA  
TATTTTGGAAAAAAATAGTATGGTGACGTAATTTAATATTTGGTTATATGTATTCAAC  
30 TAATTTATAGGTATTTTCTTCTACAGTTGGGGTATTATTTATATAAGGAAATATTGAT  
TATTTTCATCAAGAAAAGAAAGAAATTATTCAATAGAAACATATATGTTTCTTTTGCAAT  
CATAAATATATAGAGTGCATGCATGACACTAACACACACATGCACAAAAGACTTTGAGGT  
TCTTCTTTTTCTCTTTTGAATTTCTTGGTTTGTATTGTCAATTACTCTAAGAAATCATT  
TTAATTTAAGTTTGTAAAAGTTATAAAAATTATCCTAAGAAAAGAAAATAATAGTACATA  
35 AATTCTACTTATCTAATTAAGATTATAATAGAAATTTGCGATCGCGTACATGTATATGC  
TATATACTCTACCTGTCGTCATTCTCTGTATATGTATTCTAACCAAATTTGAGTTCCGAA  
TACCCTAAAACCTTAGAGTGGATTGAGACCGATAGATAAGTAAAAATTGACGATTCATATC  
AAACATGTAGTCTTATGGTAGAATATATATCCAAAATAAGATACCAAATTTATAGAGAA  
CTTGCAACGAAATGGGAAGAATTGGTGGAAATATAAACTAAAAATTCATTCTTGCTTAAA  
40 TTGAATTTTTTTTTTCTACACTGAAGAAAACAAAATTAGTttatACCATCGACAAAAGA  
AATATGCAAAAATCAACACAATATATTTTGTAGGATTTGTTTATTTTTTGTAAATACTT  
TTGAAGGATTTGTAGTTAATTGAATATATATATATATATAATATATTATGTTTTTTTT  
TTTGCCATTTTACTACATTTAACCATAACCTTGCTATTTATGGAGTCCAATAGTCCATGC  
GCATGATAAACATACAGTATAAGTGTTTACACGATTTTATATATGCATGTGATTTTCTGT  
45 CAAATAACACGTTTACTACCCAAGAATATATCATCTATTTGTTCTAACTTTTACTCATGCA  
TGCTCTATTCACTTCGTATTTCCCATTAATCTTTAATCTTTTCTATCTAATTAGTTCAA  
ATTTAAATCTAACTAAAATGACACCATATCTTTTGAATCGCTCTCTTTTGGGTGGAATC  
TTCTATATTATCAACGAGCTACTATTAAGTTACTACGTTTTTTCACTCCCTTTTTTGACC  
TTATATATAGCTAGGCTTGTAACACCTATCGAGTAATTGACTACTGTTGGAACGAGTAAA